MISSOURI BOTANICAL GARDEN

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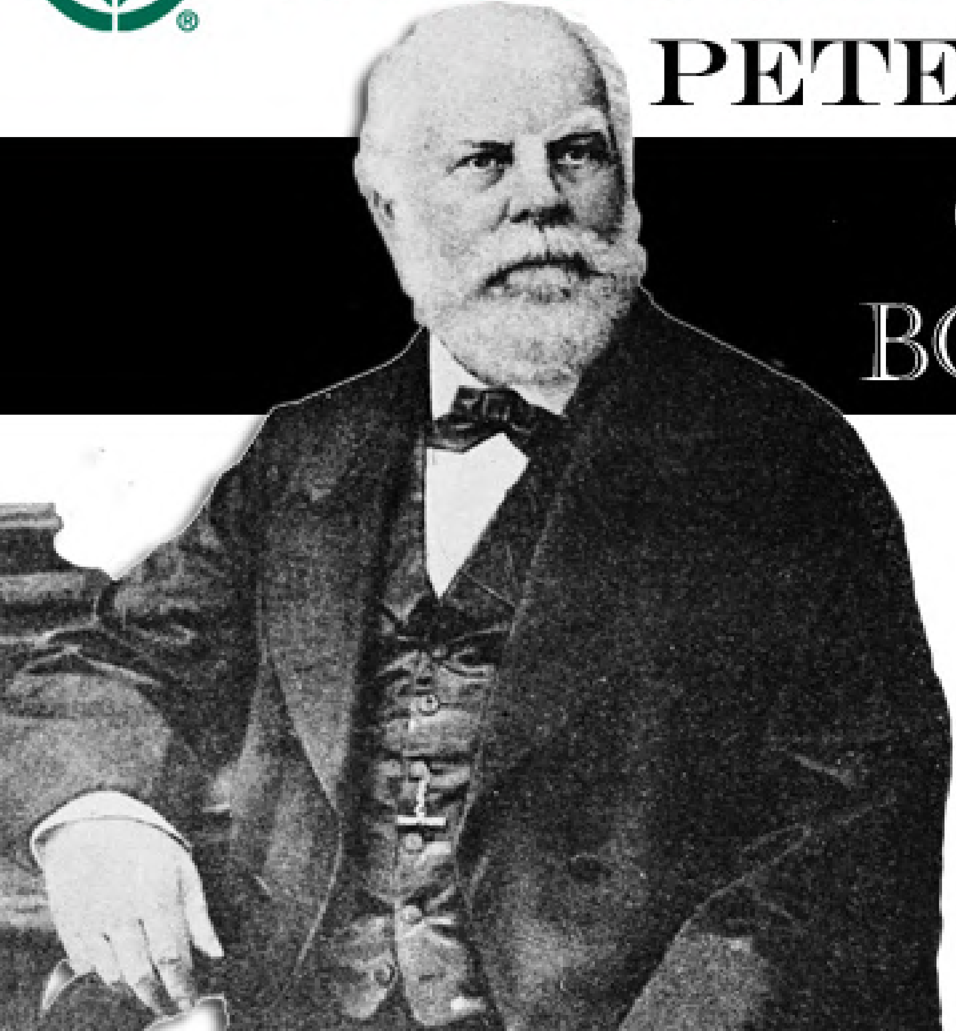
GEORGE ENGELMANN BOTANICAL NOTEBOOKS

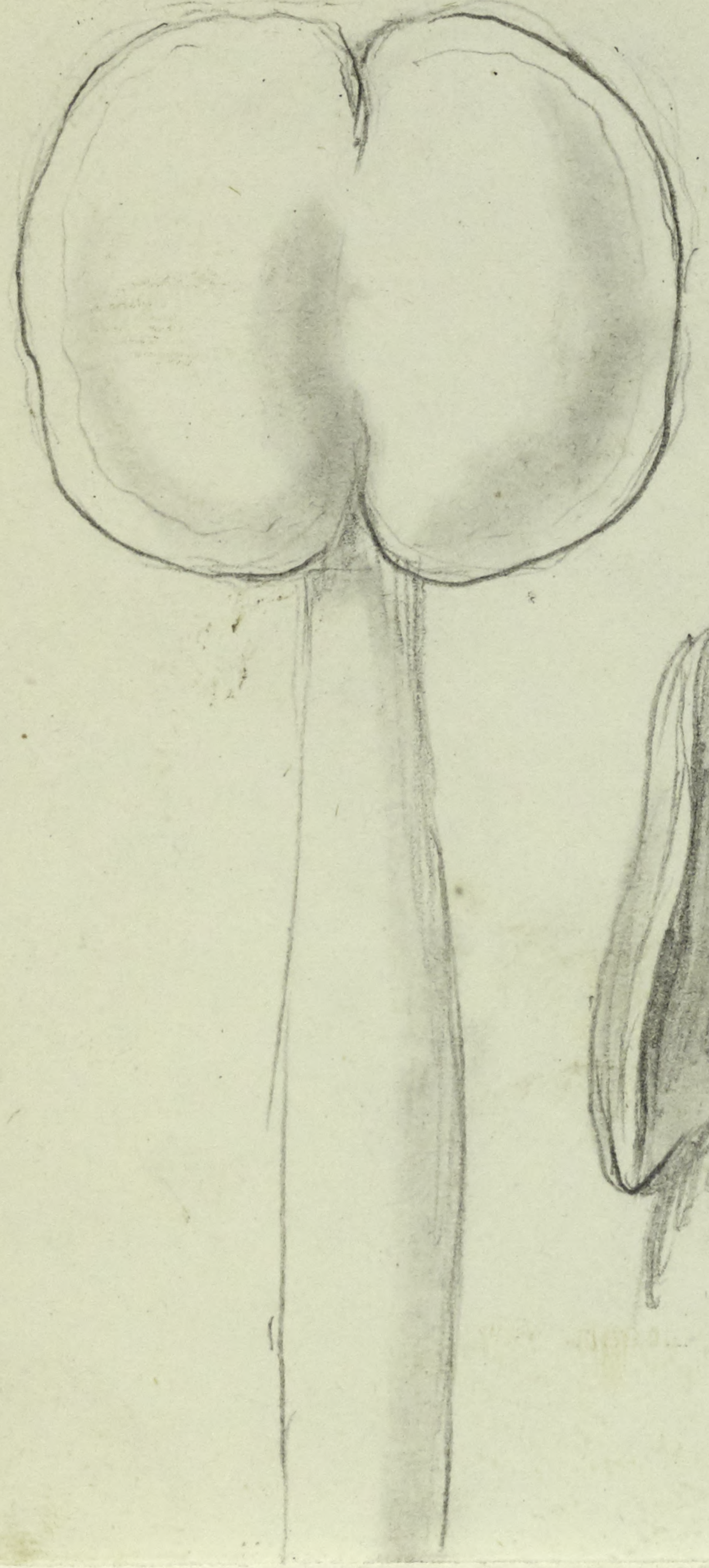


Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

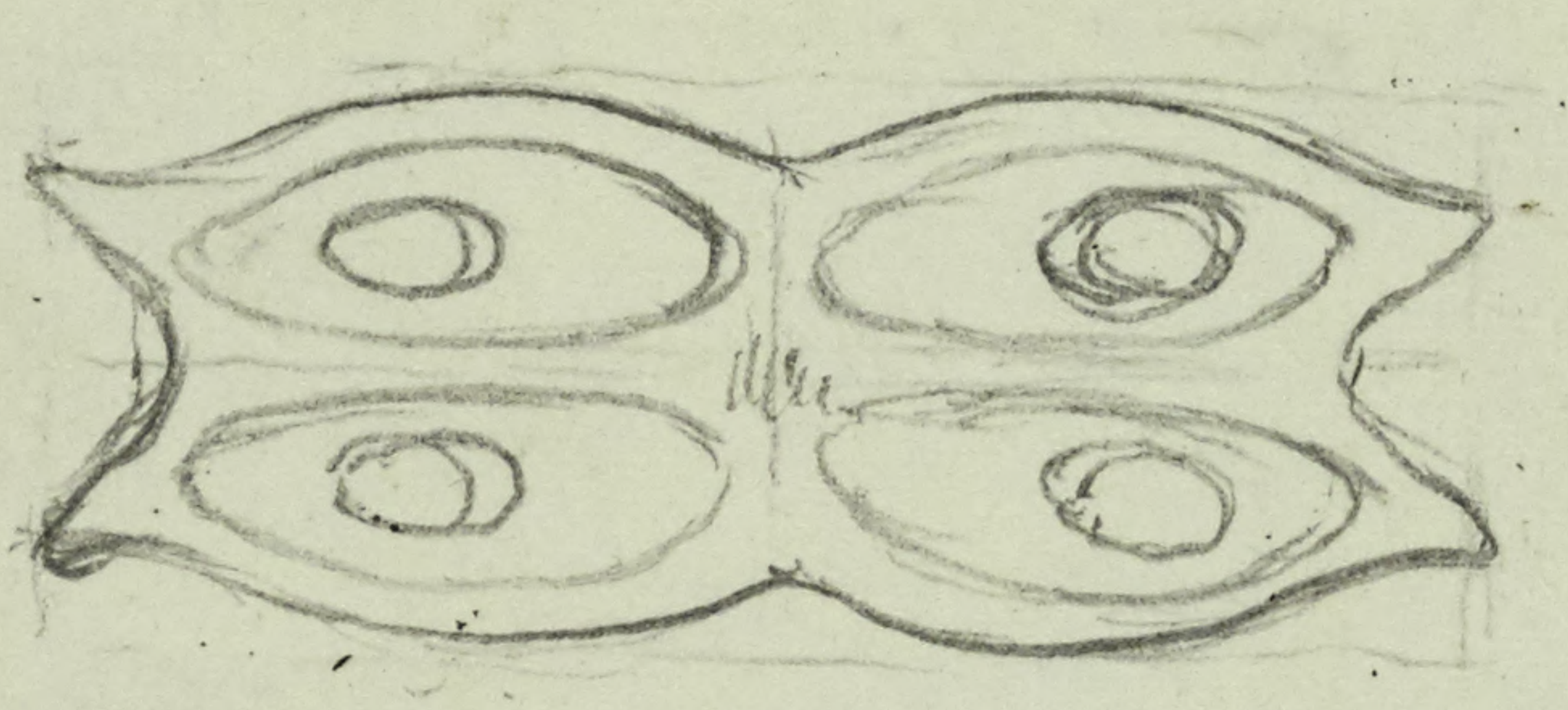
4658.6 Callitriche

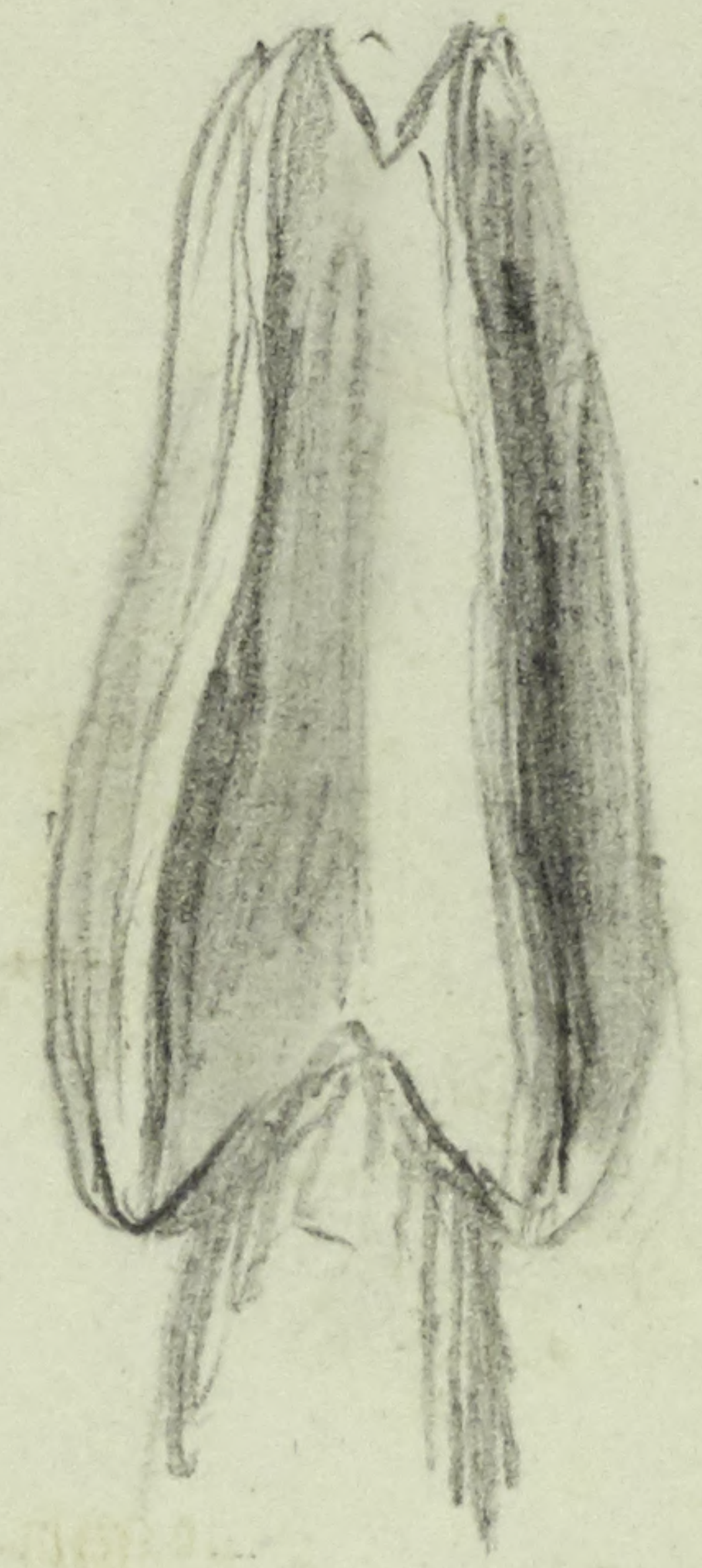
Ukiah Calif., Bolander July 24 1867

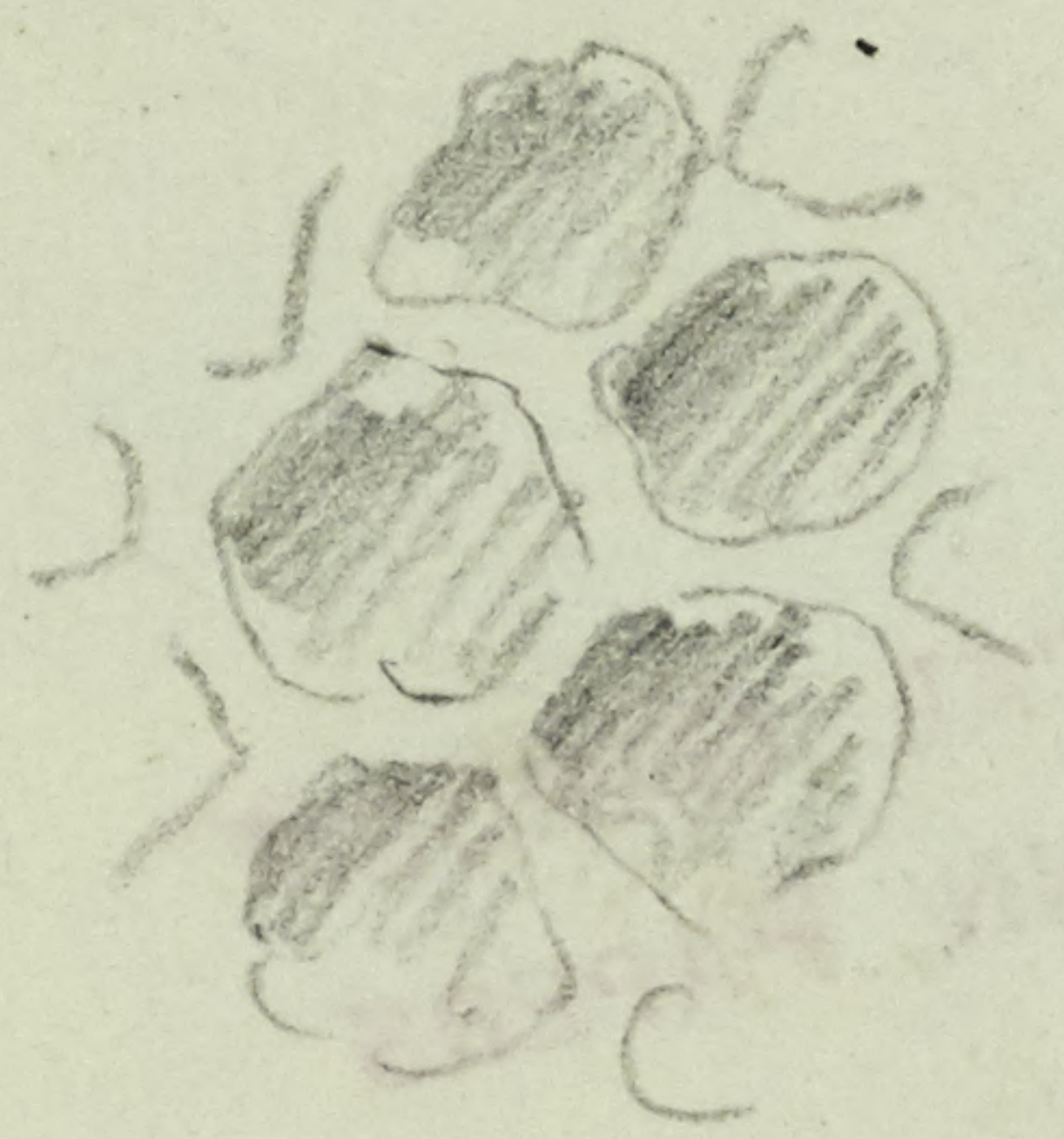
x 30



sect x 30







surface of seed x 150

863

Alex. Leitch,
APOTHECARY & CHEMIST,
Cor. 4th & Olive Sts., St. Louis.

in 1862.

Or we may divide the twelve months of each year into three groups. The first group with the highest electricity is formed by the months of January, February, November and December; the second with a mean electricity by the months of March, April, May and October; and the third with the lowest electricity by the months of June, July, August and September.

The aggregate monthly mean of

The first group	in 1861	is 52.9—	in 1862,	54.6
The second	"	"	33.5	"	35.2
The third	"	"	14.1	"	10.5

Thus in 1861 the third group prevailed, and in 1862 the first and second. But these differences are so well balanced throughout the year, that the mean of the whole year in 1861 and in 1862 is exactly the same, namely, 8.4. Such an identity in the yearly result, even to decimals, is of course not to be expected every year; but it seems to prove, at least, that the yearly mean of electricity is as constant as that of temperature, of relative humidity, and of atmospheric pressure.

The third table, showing the daily periodicity of atmospheric electricity, confirms the daily two maxima and two minima of electricity as an undeniable fact.

36-46

Callitriche marginata Torr

Mark West's Creek Calif. Bot Whipp. p. 135

April 30 1854

J Bigelow

too near C. Berteroniana?

no crystals

(Hegelm)

863A

	.	4 ...	......	.	......	3 ......
......	[illegible]	......	1	......	1	2 ......
September......	4	......	......	1	4	8 ......
October	3	1	1	1	7	1 ......
November	2	3	......	7	......	7 ......
December	2	3	......	......	......	6 ......
	50 + el.	36 + el.	23 — el.	28 — el.	15 no el.	34 no el.

Snowing was accompanied

	By Positive Electricity.		By Negative Electricity.		By no Electricity.	
	In 1861.	In 1862.	In 1861.	In 1862.	In 1861.	In 1862.
January.........	3	9	......	2	......	......
February	12	8	......	1	......	......
March	3	12	......	......	......	......
October.........	......	1	......	......	......	......
November	......	4	......	......	......	......
December	5	2	2	......	......	1 ......
	23 + el.	36 + el.	2 — el.	3 — el.	......	1 no el.

REMARKS.

The monthly mean of atmospheric electricity in 1862 was not quite so regular as that in 1861. While in 1861 an un-

Coll: Trche magniata Im
Berlandiera
California
Bd 2. 458. 6

364-7

863B

energy of his character, and with but a single man as his escort, and no other guide than his compass, he determined to continue on his course. After a wearisome travel of many days, and having encountered many privations and dangers, he and his companion, Cadotte, arrived safely, but in almost a starving condition, at the Flathead Village, situate on the western slope of the Rocky Mountains. In accomplishing this part of his arduous task, Dr. Evans passed directly through the heart of the Blackfeet country, and travelled a distance of more than two hundred miles in the main chain of the Rocky Mountains before he succeeded in finding a passage to the valley beyond. It is much to be regretted that the credit of the discovery of this important pass, which unquestionably belongs to the subject of the present sketch, has been unjustly transferred to another. It should have been named in honor of Dr. Evans instead of Cadotte, since it is well known that the latter person had no knowledge of such a passage, and, in fact, had not even been in that region before he went there under the guidance of Dr. Evans. After a few days' rest at the Flathead Village our traveller resumed his journey, and without encountering further difficulties, reached Oregon city with much valuable information concerning the extensive district of country through which he had passed.

In the prosecution of the geological survey of Oregon and Washington, Dr. Evans was actively engaged for nearly five years, during which period his travels extended over a large portion of those Territories. The results of his important labors, embracing a large amount of information relating to the geology, topography, geography and natural history of that interesting portion of the American continent, are embodied in his large report submitted to, and ordered to be printed by Congress at its last session. It was placed in the hands of the Public Printer only a few days previous to the death of its lamented author, and it is a matter of deep regret, that, owing to some informality, its publication must be delayed to await the further action of Congress. It is earnestly hoped that Congress will, at an early period, make the necessary provision for the printing of this important document, the preparation of which has cost such a large expenditure of labor and money, and which promises to be of the highest value to science and the people for whose benefit the survey was ordered.

September 2, 1861.

The President, Dr. Engelmann, in the chair.

Seven members present.

The following donation to the library was received: Bull. de la Soc. Imper. zool. d'Acclimatation, Paris, No. 7, Juillet, 1861, *from the Society*.

Mr. Holmes presented from Dr. B. F. Shumard the following skulls from Texas: *Felis pardalis*, Linn. (Tiger-cat), from Travis Co.; *Felis onza*, Linn. (Jaguar), from Hays Co., and *Dicotyles torquatus* (Peccary), from Travis Co.

Dr. Engelmann made some remarks on the temperature and humidity of the past three summer months. June and August were by more than two degrees warmer than the averages for these months, while July was cooler. The quantity of rain for each of these months was below the average so much interest among scientific men.* And such was his energy that, almost unaided, he gathered in a few weeks the extensive collection of fossil bones which furnished to Dr. Leidy the materials for his splendid memoir on the "Extinct Fossil Fauna of Nebraska." At the same time he collected a large and elegant series of Cretaceous fossils, some of which were described and figured by Dr. Owen in his final report on the Geology of Iowa, Wisconsin and Minnesota. The notes made by Dr. Evans on the geological features of that remarkable region were likewise of the highest interest, and from these Dr. Owen has compiled one of the most instructive and beautiful chapters to be found in his valuable report. In addition to his scientific duties, Dr. Evans had almost exclusive control of the business department of Dr. Owen's survey, which of itself involved an immense deal of labor. The satisfactory manner in which he discharged these onerous duties, often in the midst of disheartening privations and even danger, commanded the highest esteem and confidence of Dr. Owen and his associates, while his goodness of heart, uniform courtesy, and self-sacrificing disposition, secured to him their warmest friendship.

After the completion of the field work of the North-west Survey, (1850,) Dr. Evans received the appointment of U. S. Geologist for Oregon, which he accepted, and immediately entered upon the duties of his new office with his usual energy and zeal. The survey was organized by the appointment of Dr. B. F. Shumard to the position of Principal Assistant, who shortly after embarked for Oregon, by way of the Isthmus of Panama. Dr. Evans determined to revisit Nebraska, and thence proceed overland to Oregon by an unexplored route, with the view of determining the general geological and topographical features of a vast region, then almost unknown to science, and of ascertaining if there existed a nearer way from the Upper Missouri to the Oregon coast than that usually travelled. He proceeded to St. Louis, and there spent a few days in making preparations for his journey. He then took passage for Fort Pierre Chouteau, on board a steamer belonging to the American Fur Company. During this passage, which occupied nearly a month, cholera to an alarming extent prevailed among the passengers and employees of the Fur Company on board, several of whom died, and the mortality would have been far greater but for the kind attention of Dr. Evans, who, though himself laboring under an exhausting diarrhœa, allowed himself no rest, but in the triple capacity of physician, nurse and companion, was ever at the bed-side of the sick, administering to their wants, and encouraging them by his cheering words.

From Fort Pierre, Dr. Evans again visited the Mauvaises Terres, where in a short time he succeeded in obtaining a large collection of the fossil fauna of that region, even more extensive than his former one, and embracing a considerable number of new and interesting species. On his return to the Fort he set about preparing for his long journey, which from the hostility of the Blackfeet and other Indian tribes, together with the difficulties incident to the route, was regarded by the Indian traders as extremely hazardous; hence it was exceedingly difficult to find either guides or hunters willing to accompany him. After much persuasion, however, he succeeded in procuring the services of two hunters and a half-breed guide, they agreeing to go with him as far as the Flathead Village. With this meagre escort he started from Fort Pierre, but scarcely had he reached the borders of the Blackfeet country ere his hunters became alarmed, and unceremoniously left his camp during the night and returned to the Fort. Under these discouraging circumstances a person less courageous than Dr. Evans would have turned back; but difficulties served only to develope the indomitable

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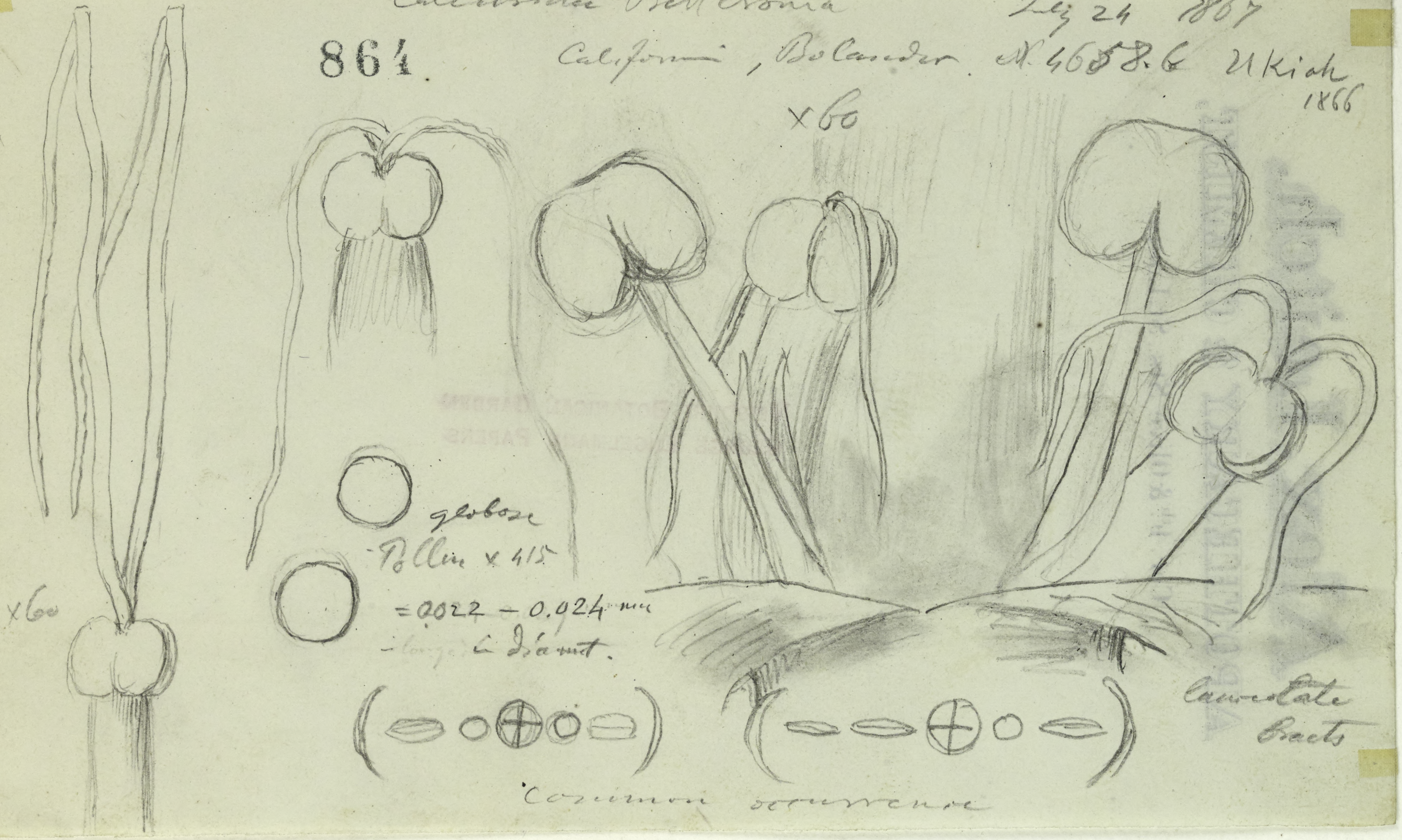
* To Dr. Hiram A. Prout is justly due the credit of having first called attention to the existence of such remains in that region by his excellent memoirs of Palæotheroid and other bones, published in Silliman's Journal.

Callitriche Berteronia July 24 1867

864.

California, Bolander. N. 4658.6 Ukiah 1866



globose Pollen x 415

=0.022 – 0.024 mm -longer in diamet.

Lanceolate bracts

Common occurrence

Alex. Leitch,
APOTHECARY & CHEMIST,
Cor. 4th & Olive Sts., St. Louis.

0 1 2 3 4 5 6 7 8 9 10
cm
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MISSOURI
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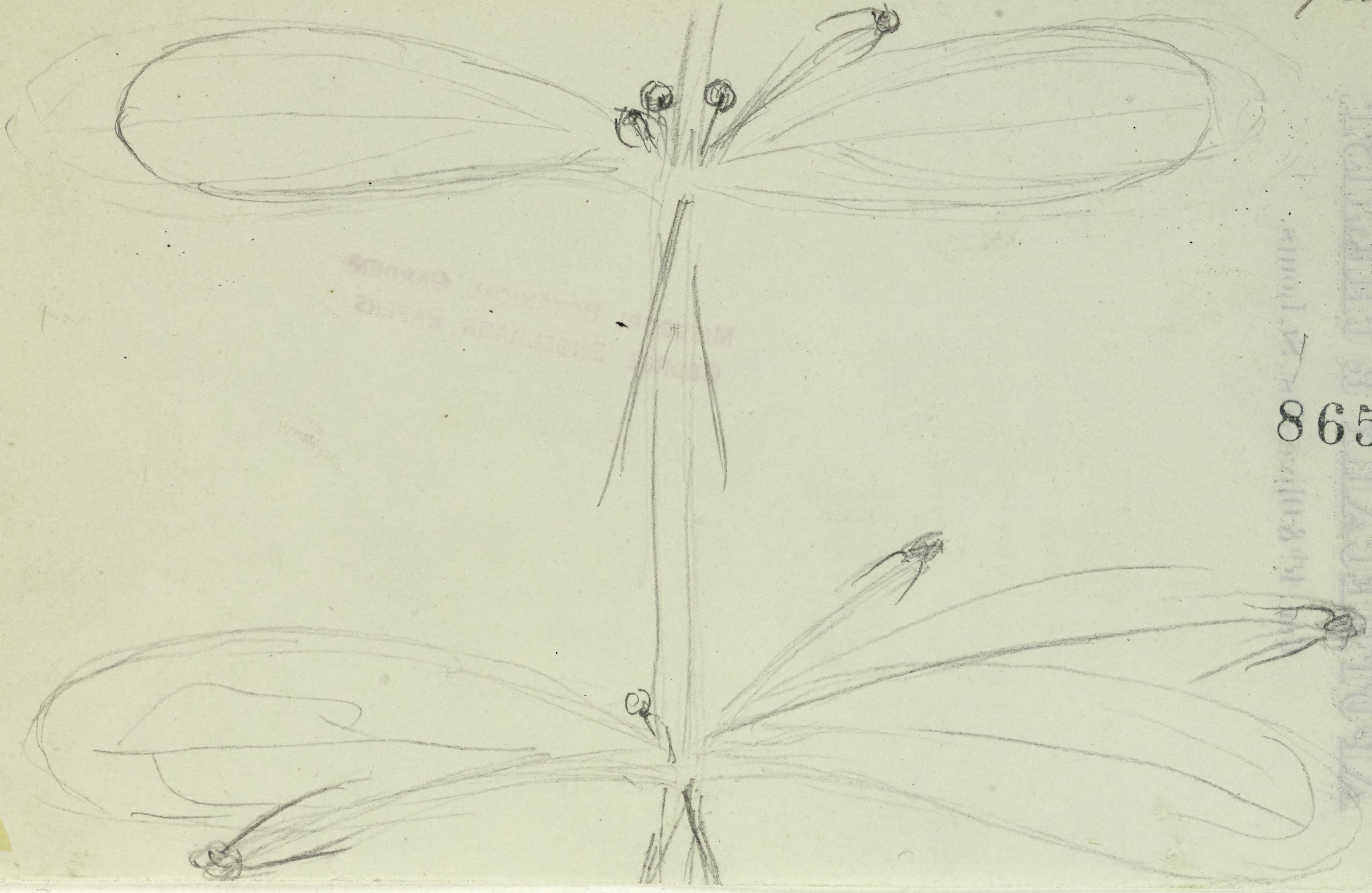
GARDEN

4658 6.

July 24 1867

865



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Cor. 4th. & Olive Sts., St. Louis.

Callitriche Berteroaniana Schl July 24th 1867

866

Steud. nom.

Ukiah, Calif. Bolander N 4658. C. 1866

I find (on hasty examination) no stellate hair.

Bracts lanceolate

Stamens not elongated

carpels carinate, not winged.

styles much longer than ovary (1/2 – 2, rarely 3–4 mm

reversed, deciduous

0 1 2 3 4 5 6 7 8 9 10
cm
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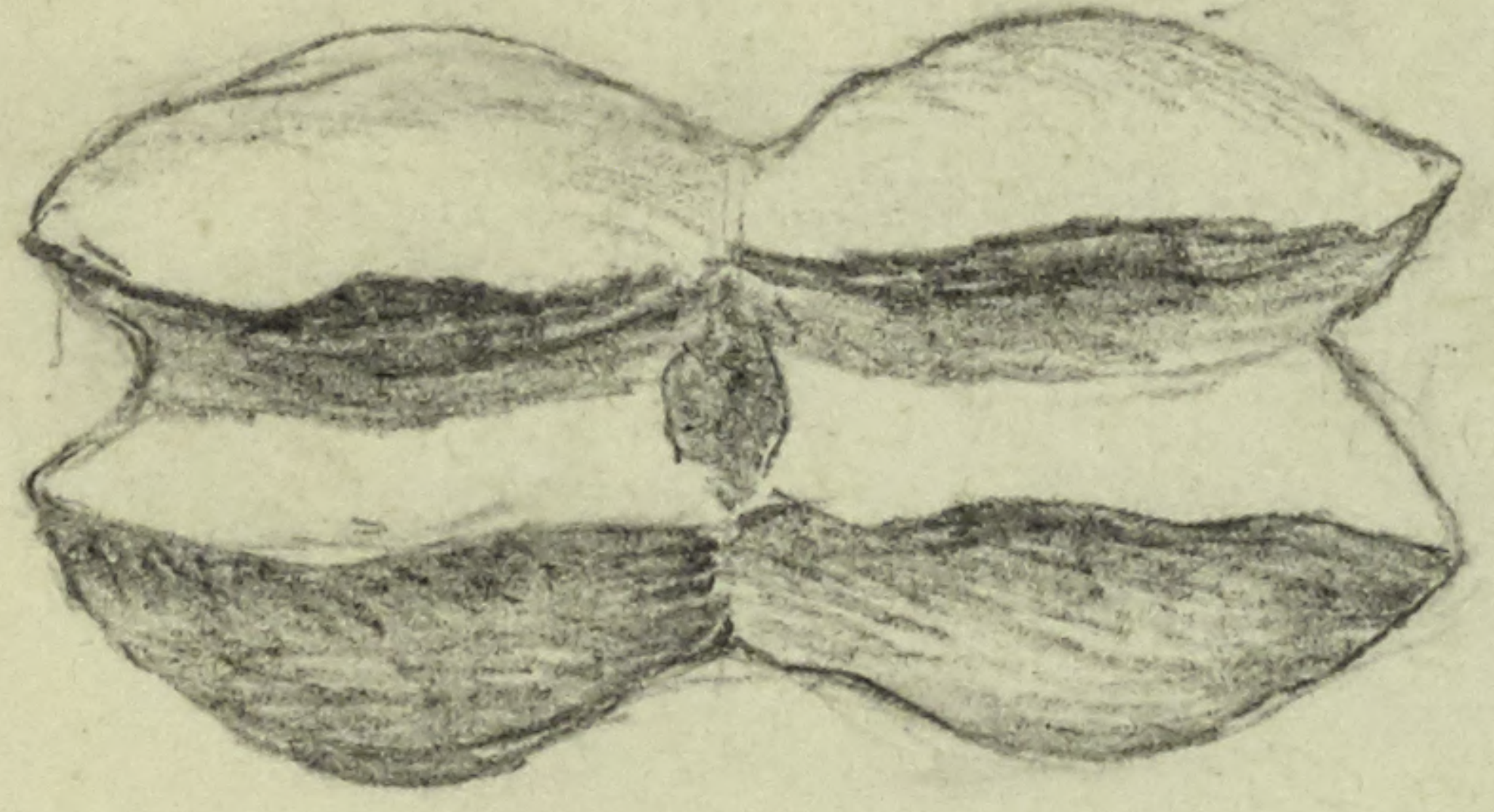
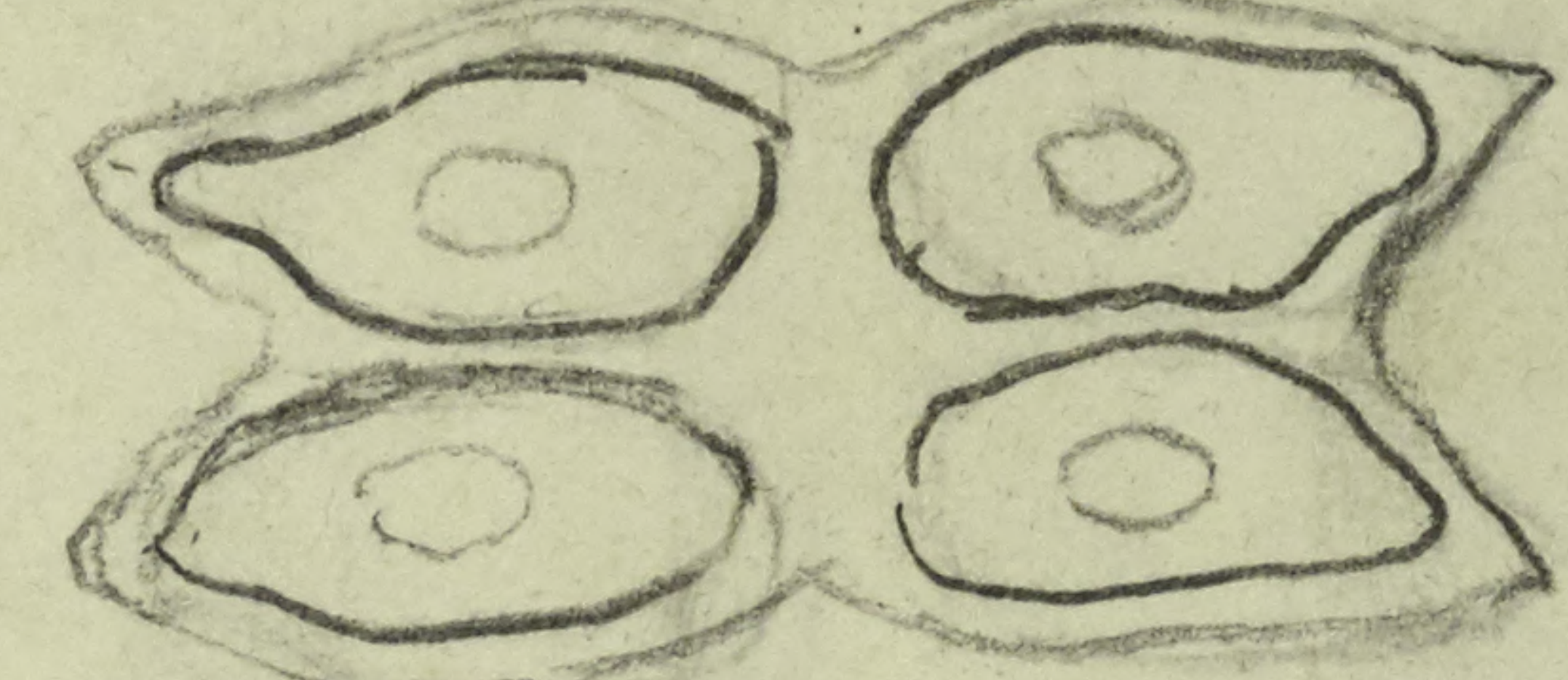
Corner 4th & Olive Streets, St. Louis.

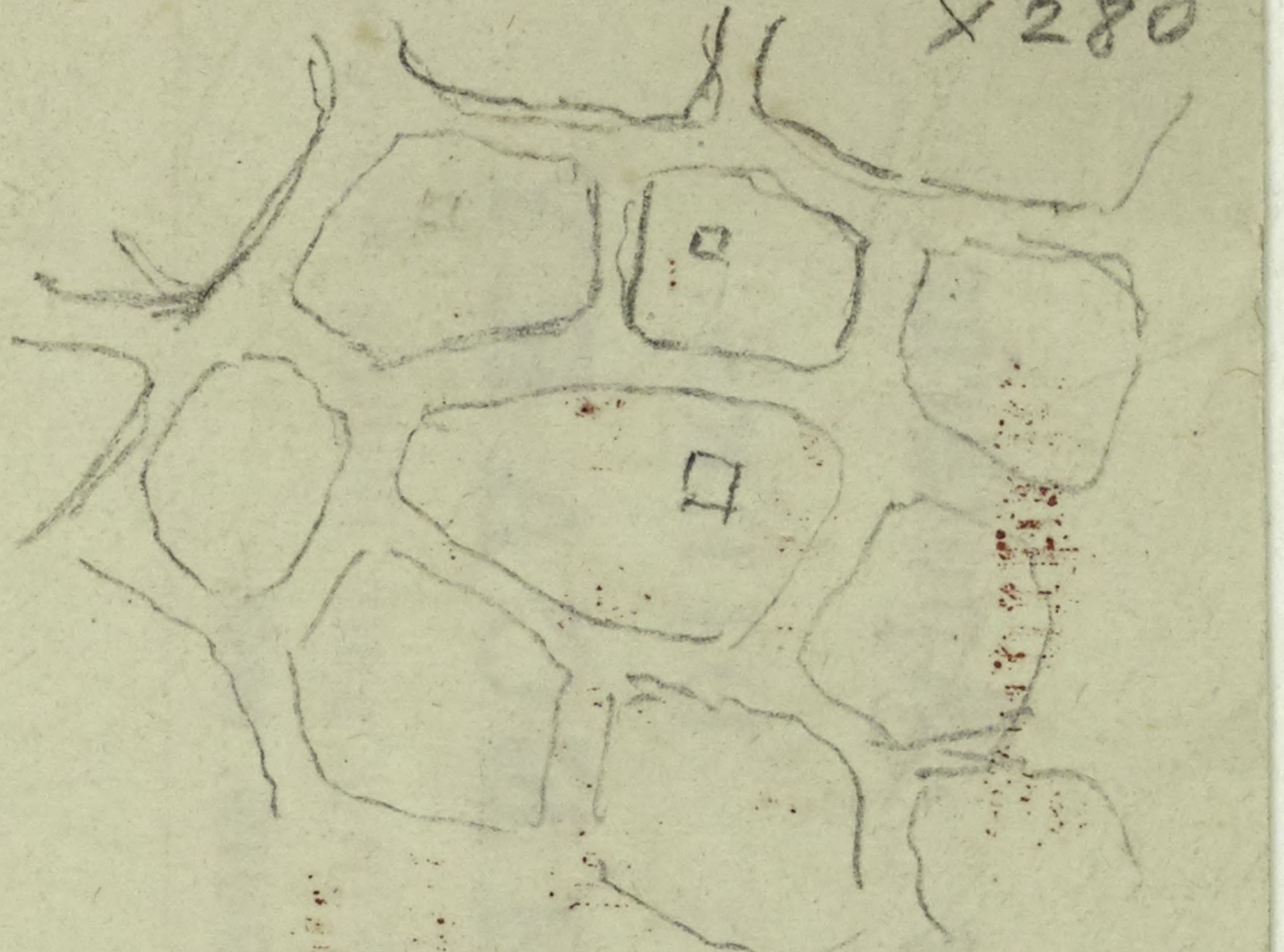
Callitriche marginata Torr Octob 18 71

Silverton Oregon
E. Hall Jan 1871

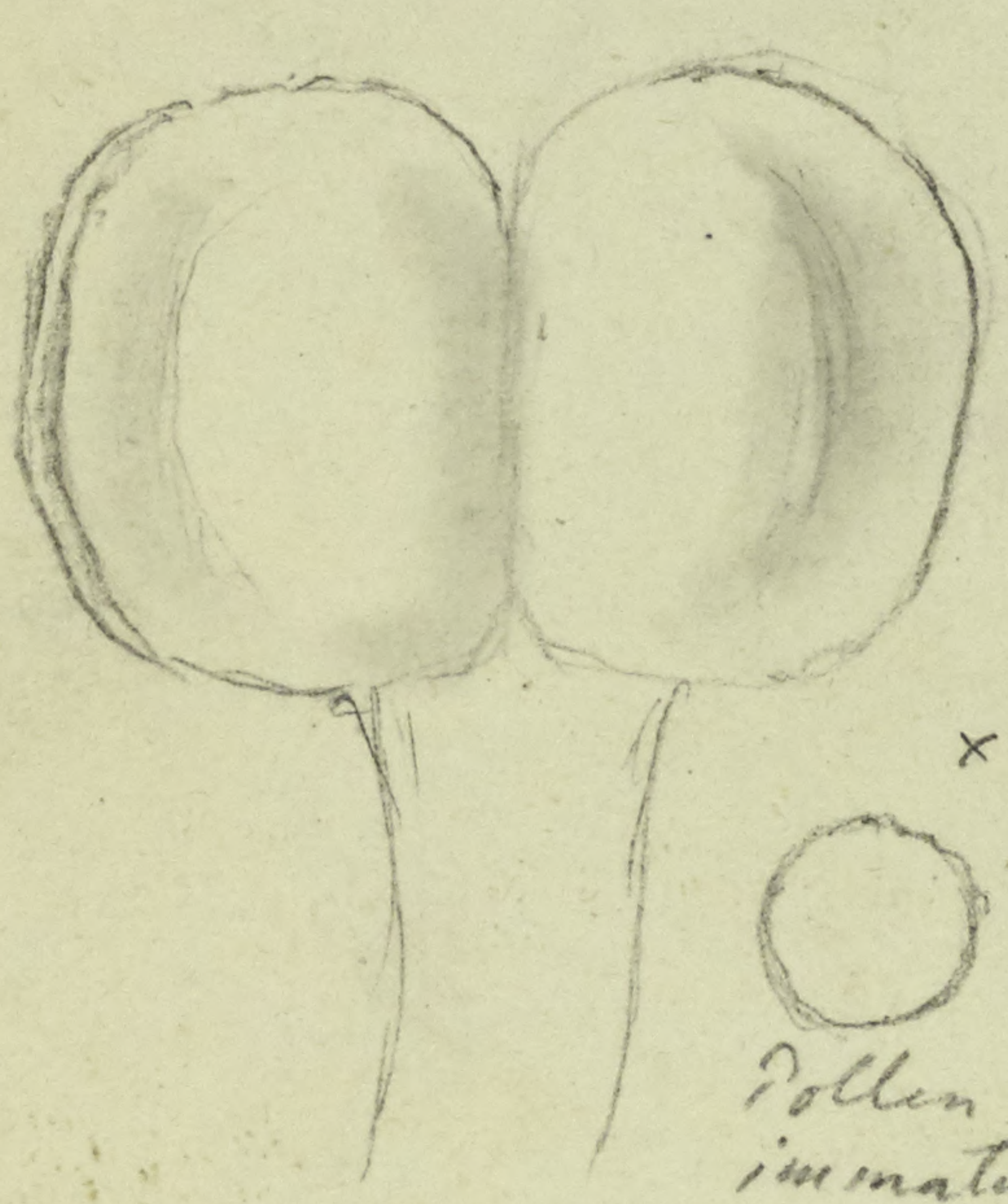


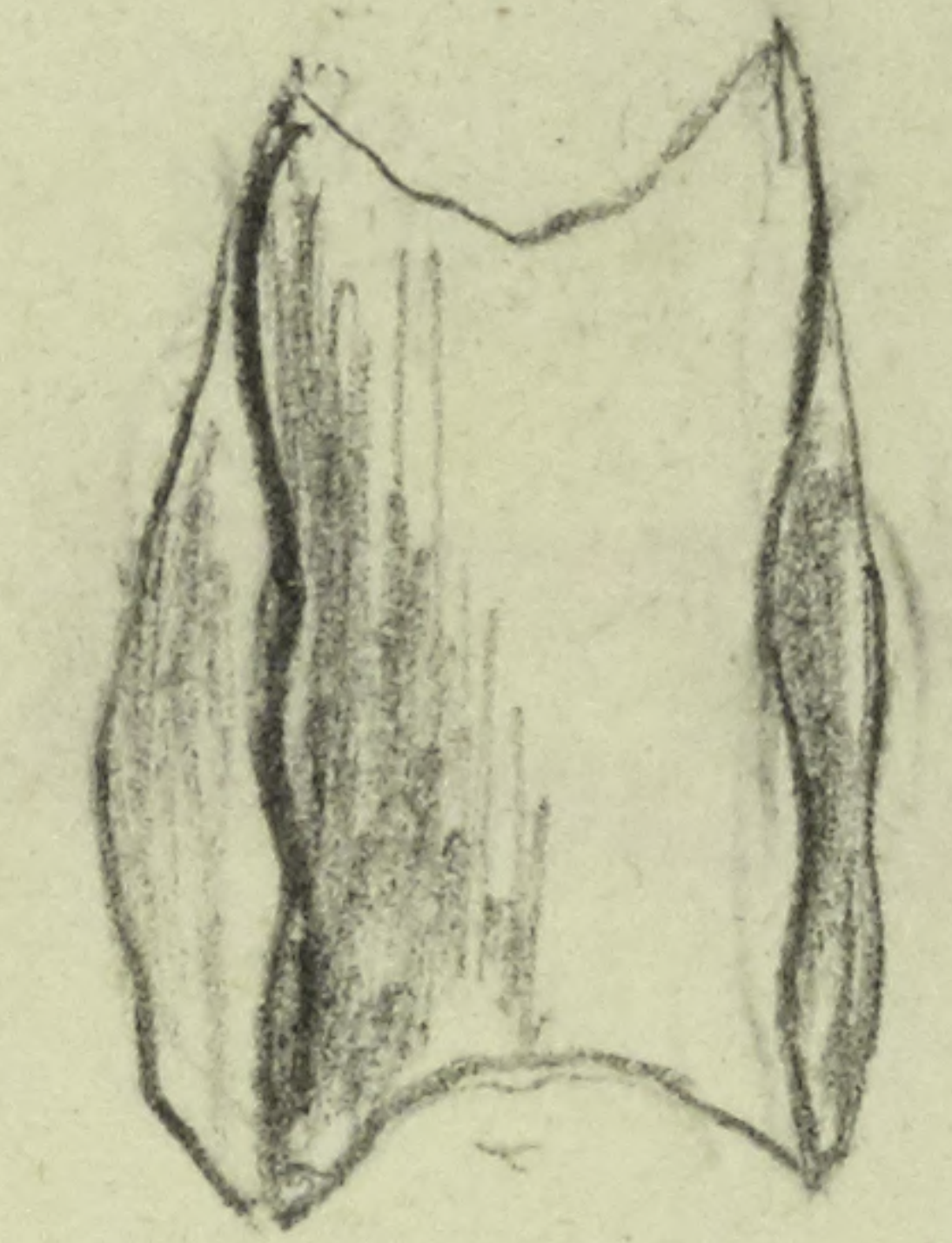


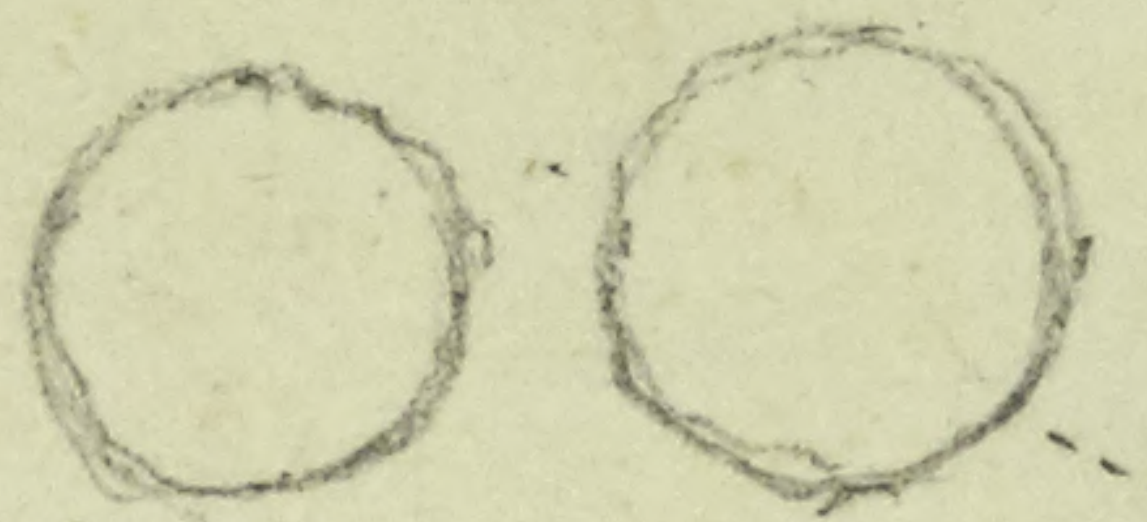
×30



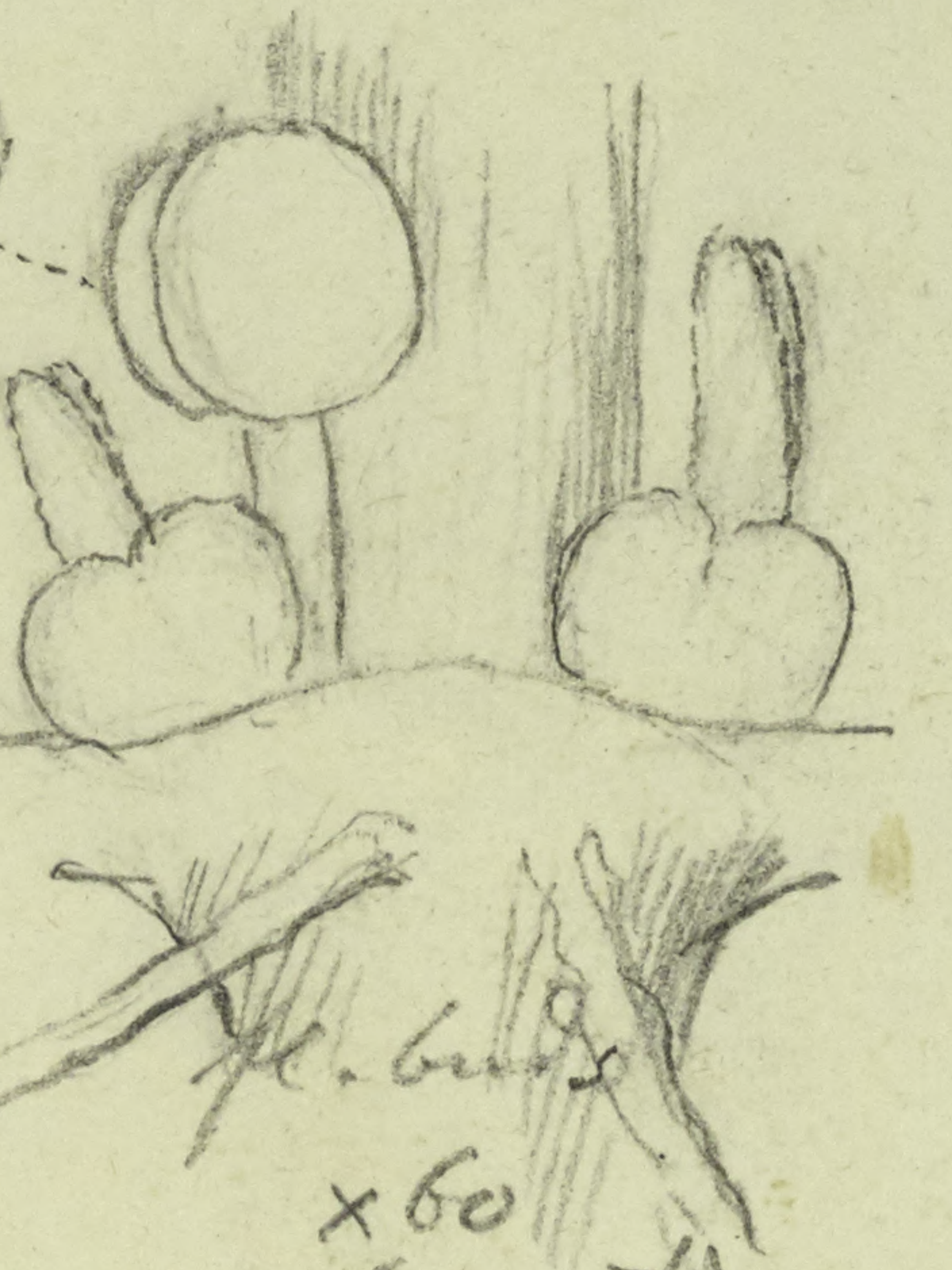
Some few small crystals (too young? and indistinct







Pollen of immature anther



×60
no bracts

fruit $\frac{33}{30}$ wide = 1.1
$\frac{21}{30}$ high = 0.7
$\frac{17}{30}$ thick = 0.5-0.6

867

forma terrestris ebracteata

0 1 2 3 4 5 6 7 8 9 10 cm
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MISSOURI BOTANICAL GARDEN

Deutsche Apotheke.

HENRY DIERS,

APOTHECARY,

South East Corner Fifth aud Biddle Streets,

ST. LOUIS. MO.

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cm
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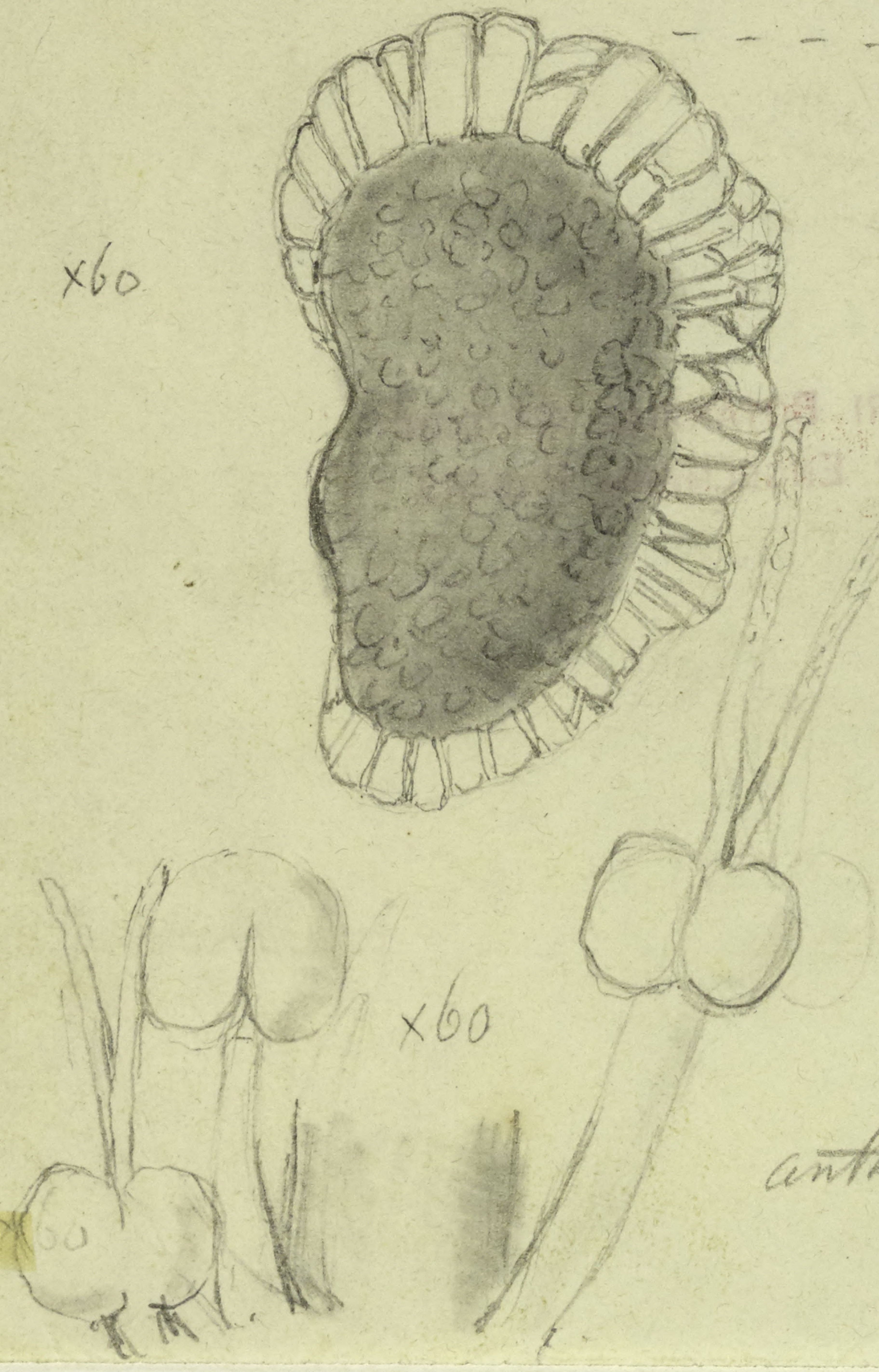
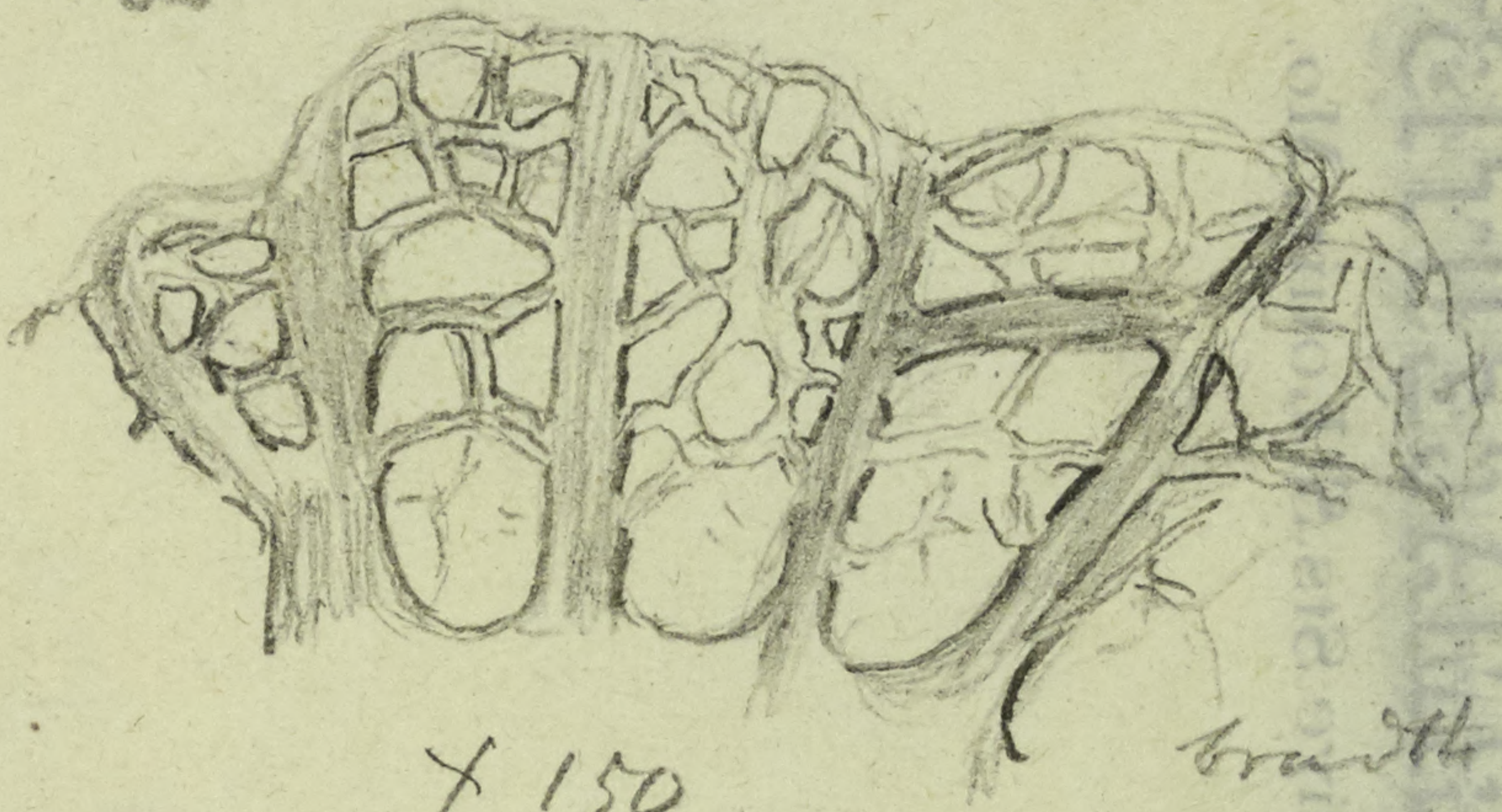
Call. marginata Torr Sept 6 1864

Calif Bigelow Typical speci–





breadth of margin
0.15 – 0.16 mm

anther $\frac{14}{60}$ = 0,23 mm

868

0 1 2 3 4 5 6 7 8 9 10
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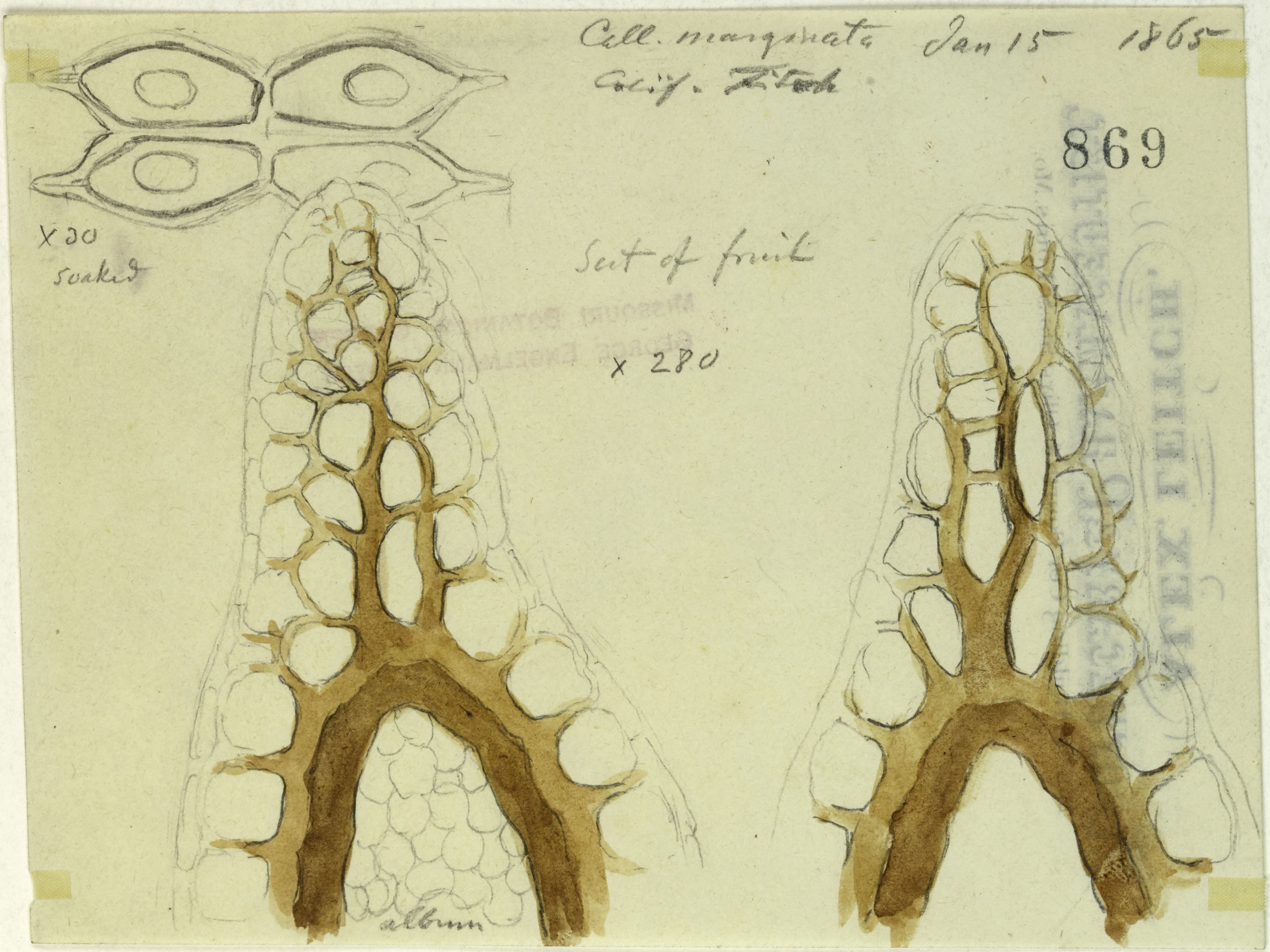
ALEX. LEITCH,
APOTHECARY & PHARMACEUTIST,
Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

Call. marginata Jan 15 1865
Calif. Fitch

869



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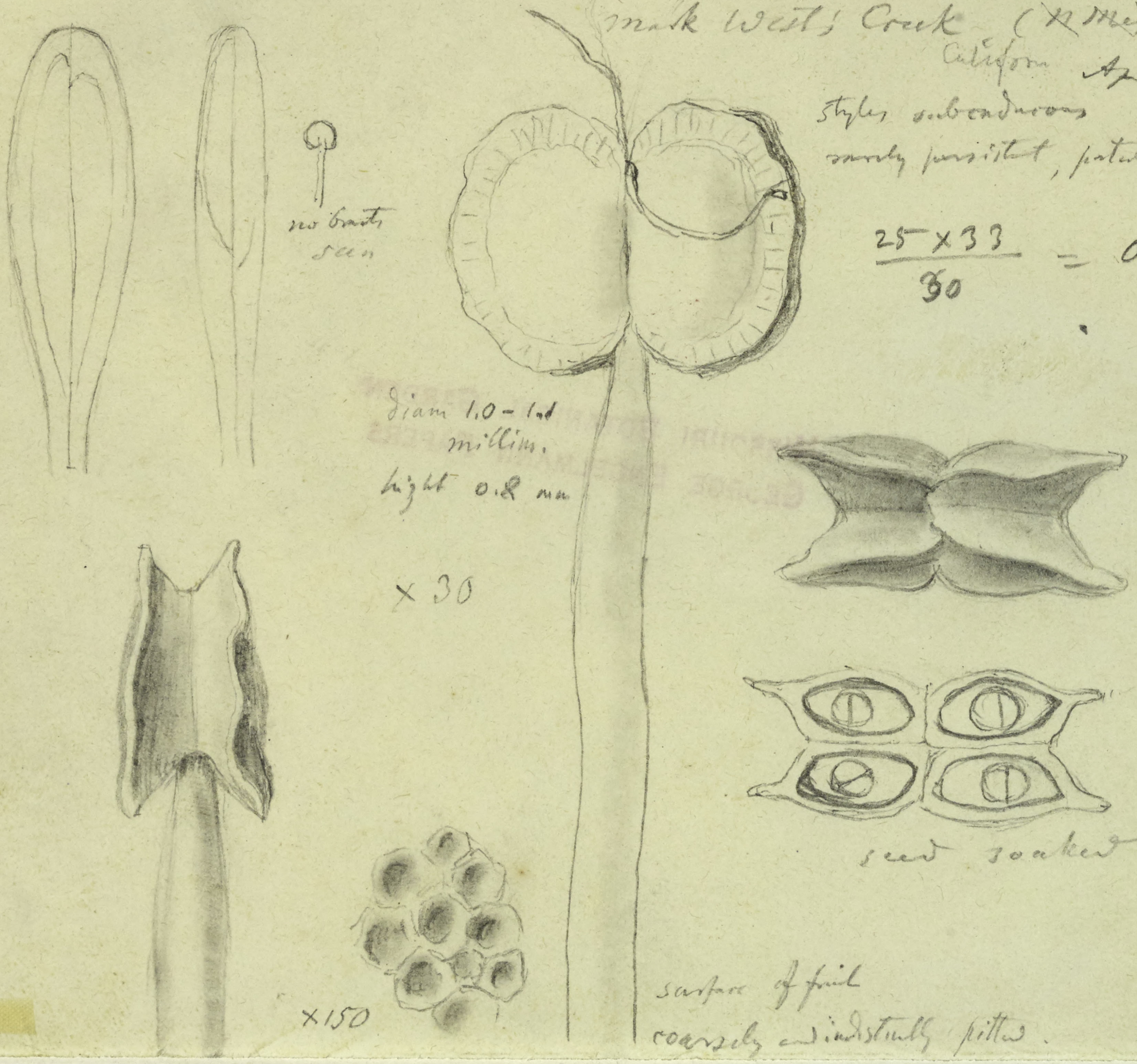
Callitriche marginata Torr! Sept 5 1864

Mark West's Creek (~~N Mex~~)! Dr Bigelow
Californ Apr 30 1854

styles subcaducous
rarely persistent, patulous or recurved

$\frac{25 \times 33}{30} = 0.8 \times 1.1$ mm

870



diam 1.0–1.1 millim.
hight 0.8 mm

surface of fruit
coarsely and indistinctly pitted.

0 1 2 3 4 5 6 7 8 9 10
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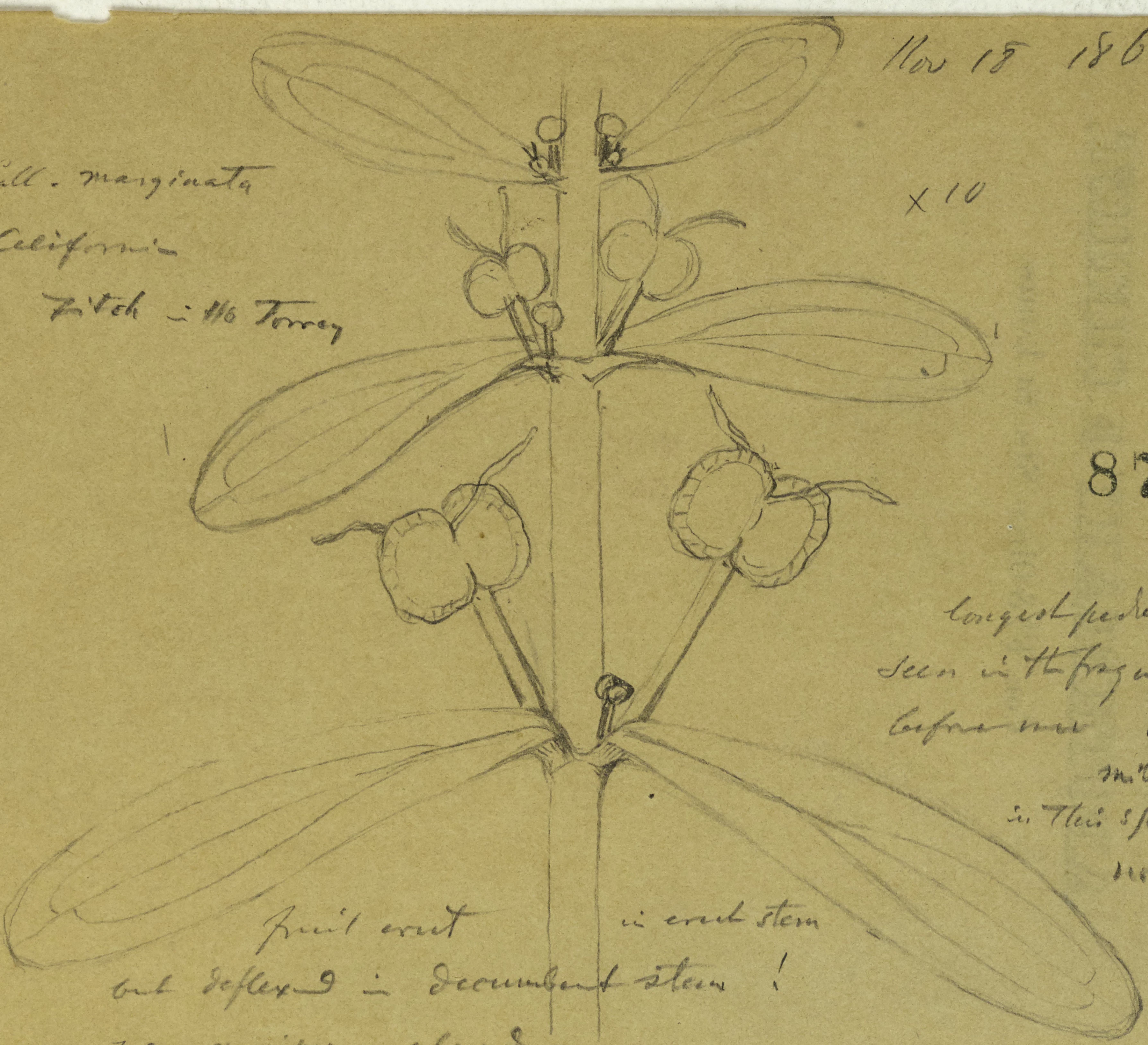
Nov 18 1864

Call. marginata

California

Fitch in hb Torrey



871

longest peduncle seen in the fragment before me is 4 millimeter in this speci— not quite 2½

fruit erect in erect stem but deflexed in decumbent stem !

see specimen glued on

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APOTHECARY & CHEMIST,
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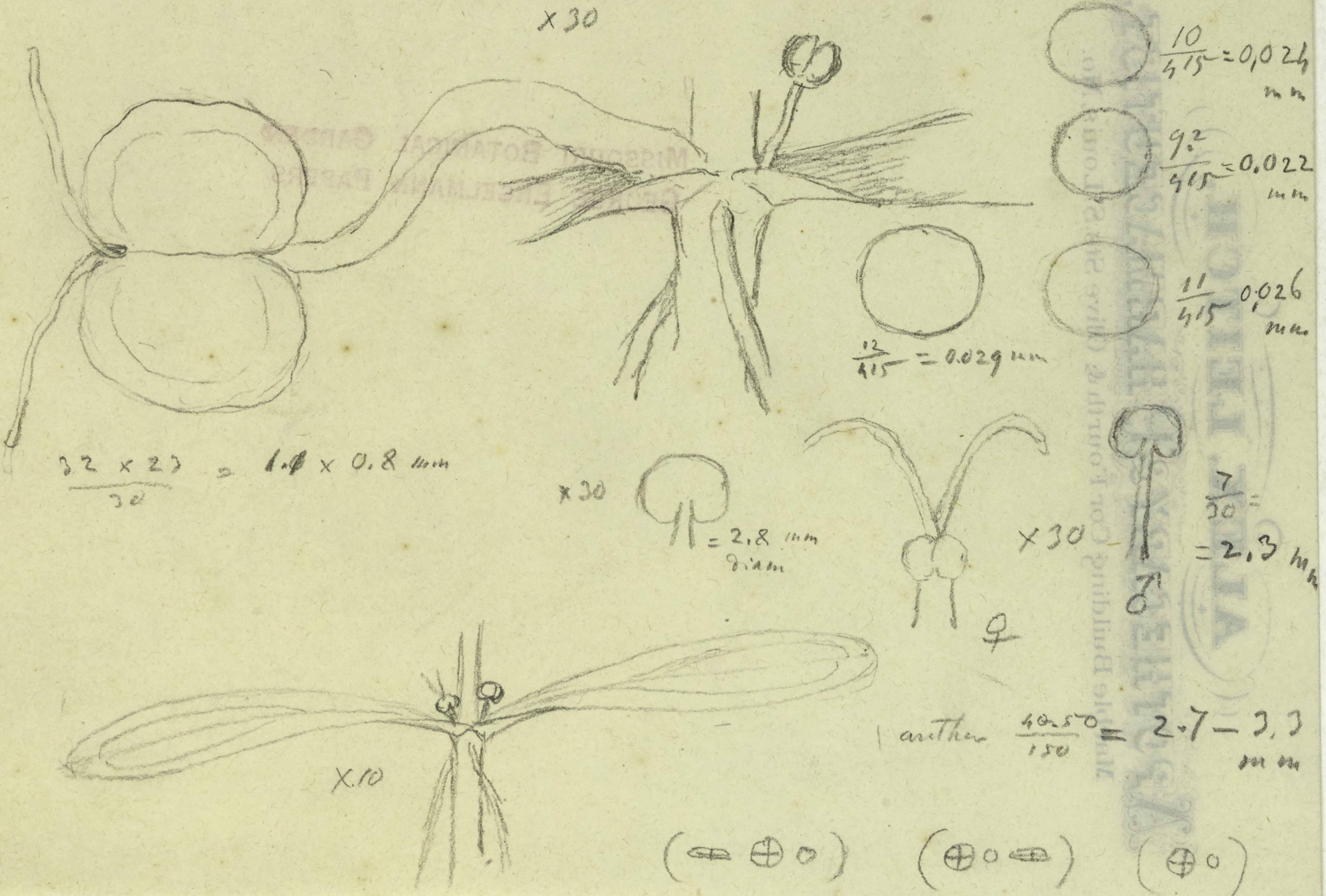
1256 Call. marginata 26 Jan 1865

Californ Geol. Survey W H Brewer 872



0 1 2 3 4 5 6 7 8 9 10
cm
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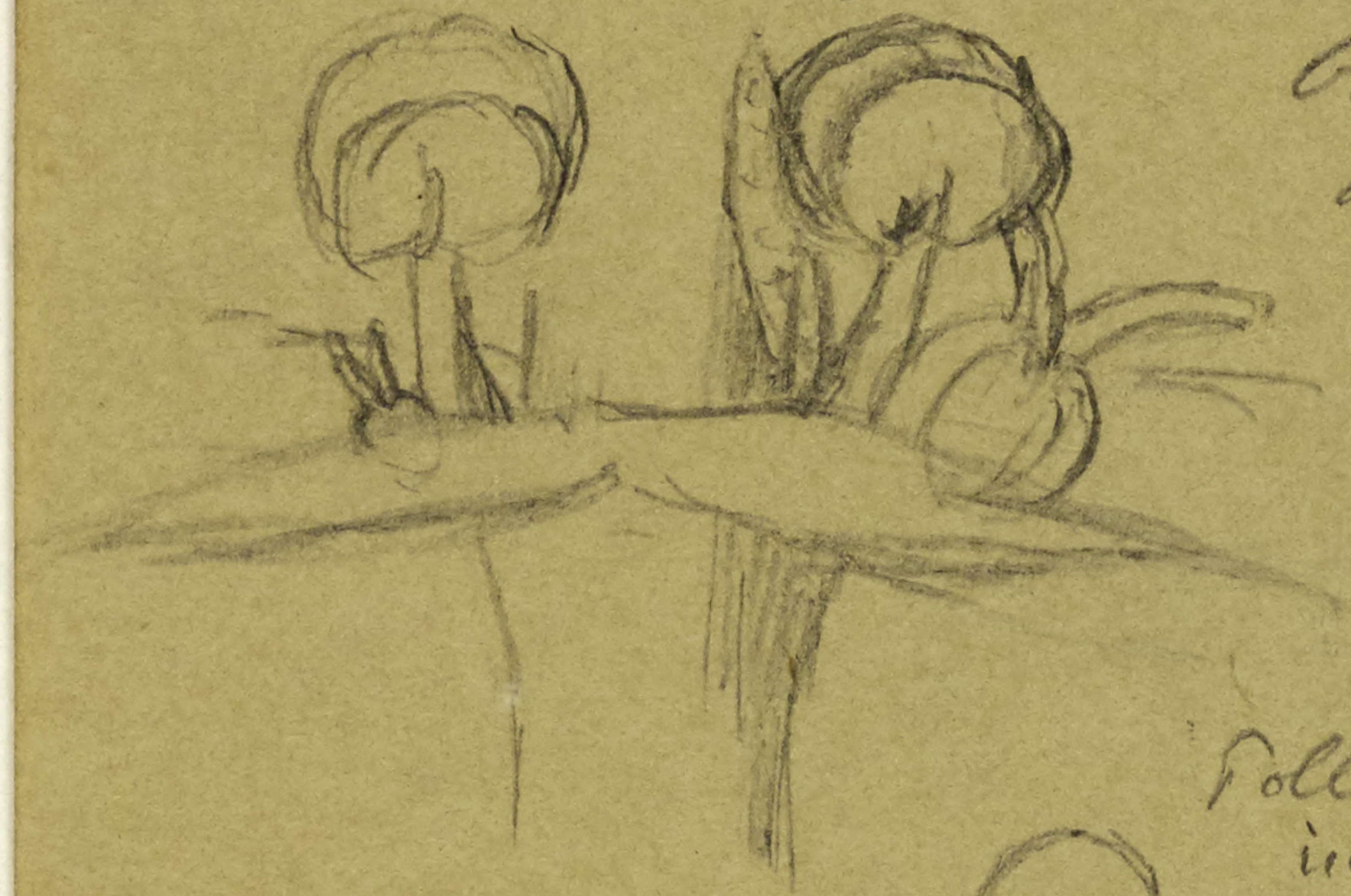
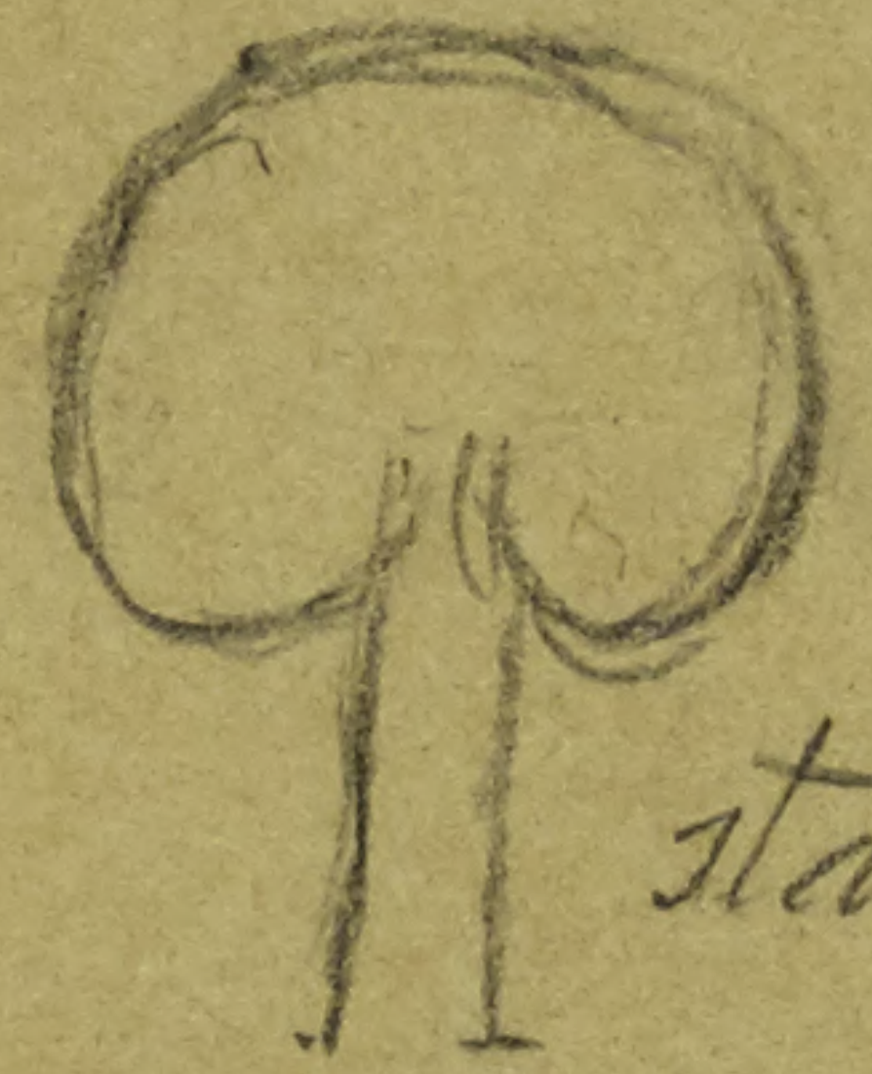
Cal. marginata Nov 18 1864

Calif, Fitch in Hb Torrey

x30



small, lanceolate bract seen twice at base of stamen



stamen x 30

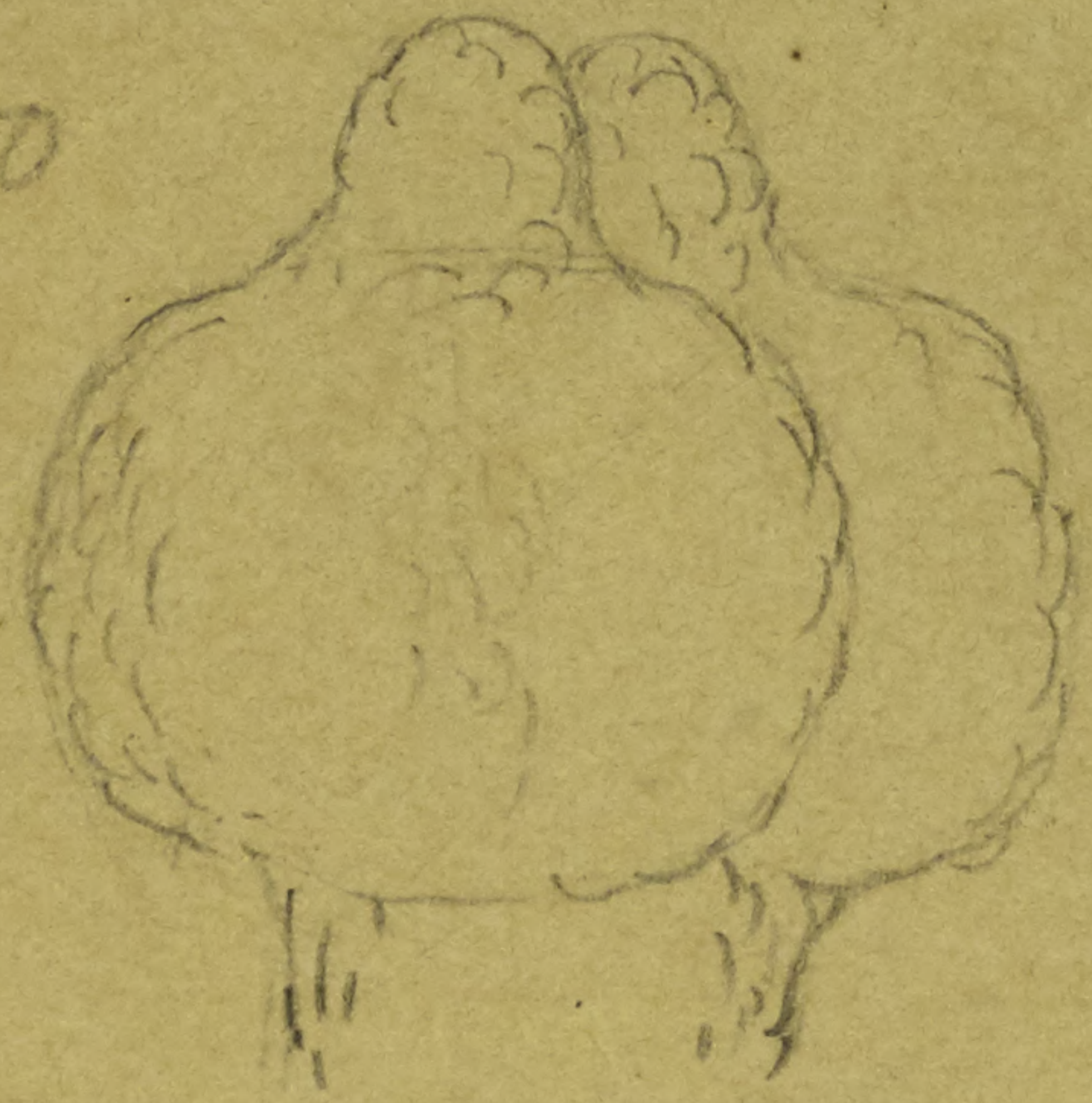
= 0.4 mm in diame

Pollengrains from immature anther

x 415

= 0,017 mm

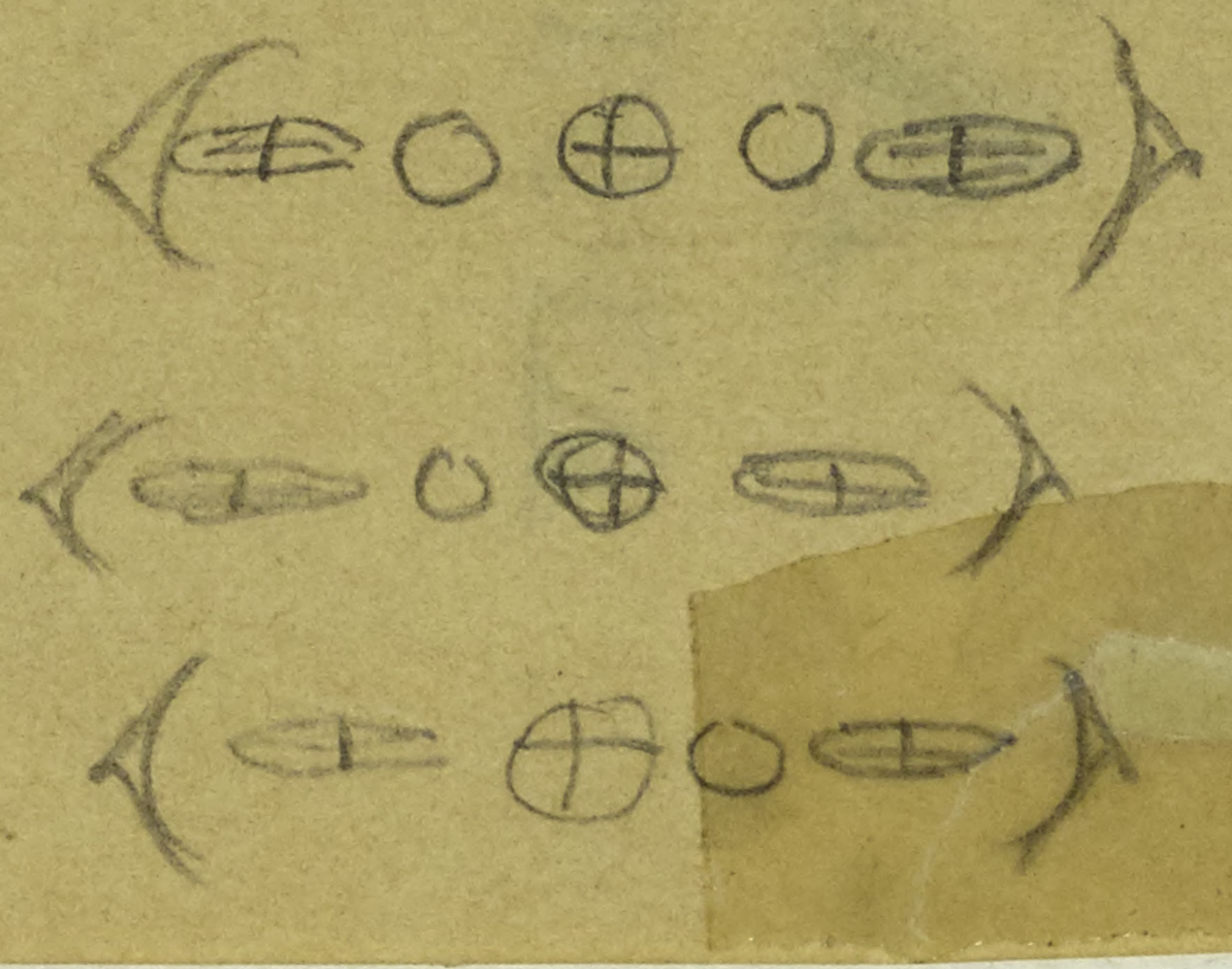
x150



very young pistil

= 0.020 mm

Pollen of mature anther



873

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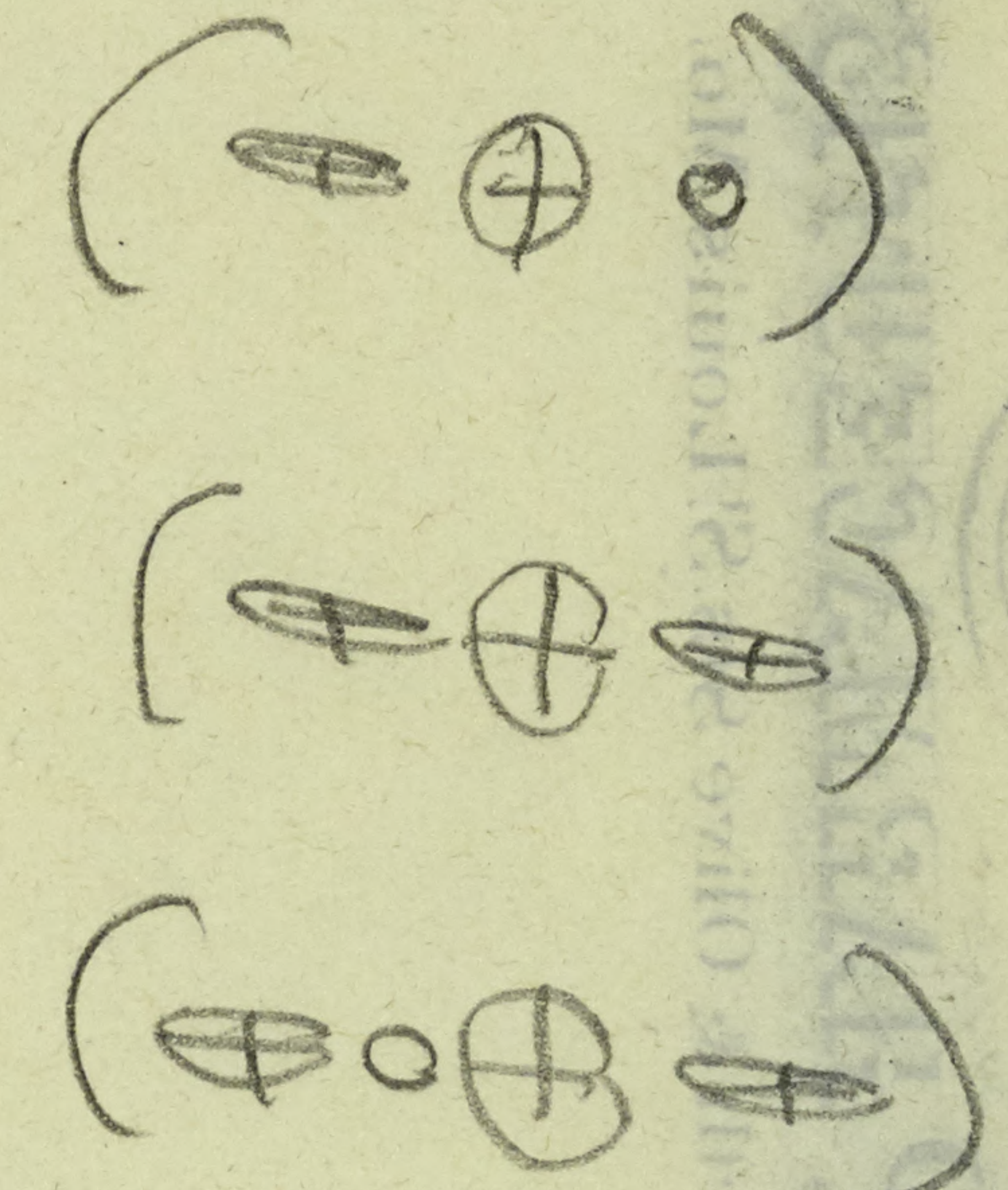
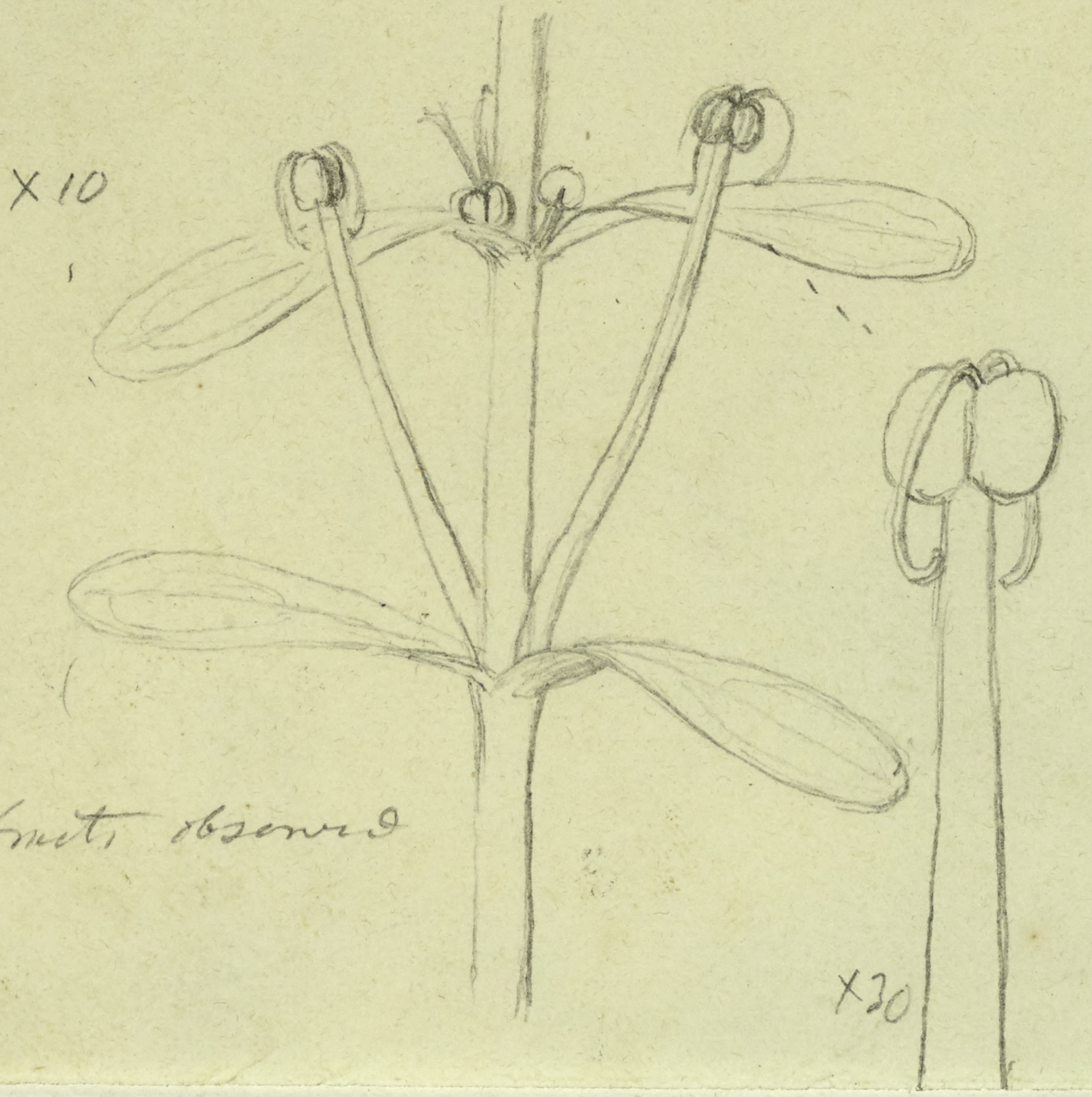
APOTHECARY & CHEMIST,
Cor. 4th. & Olive Sts., St. Louis.

Callitriche marginata Torr Sept 6 1864

California Bigelow



three instances observed

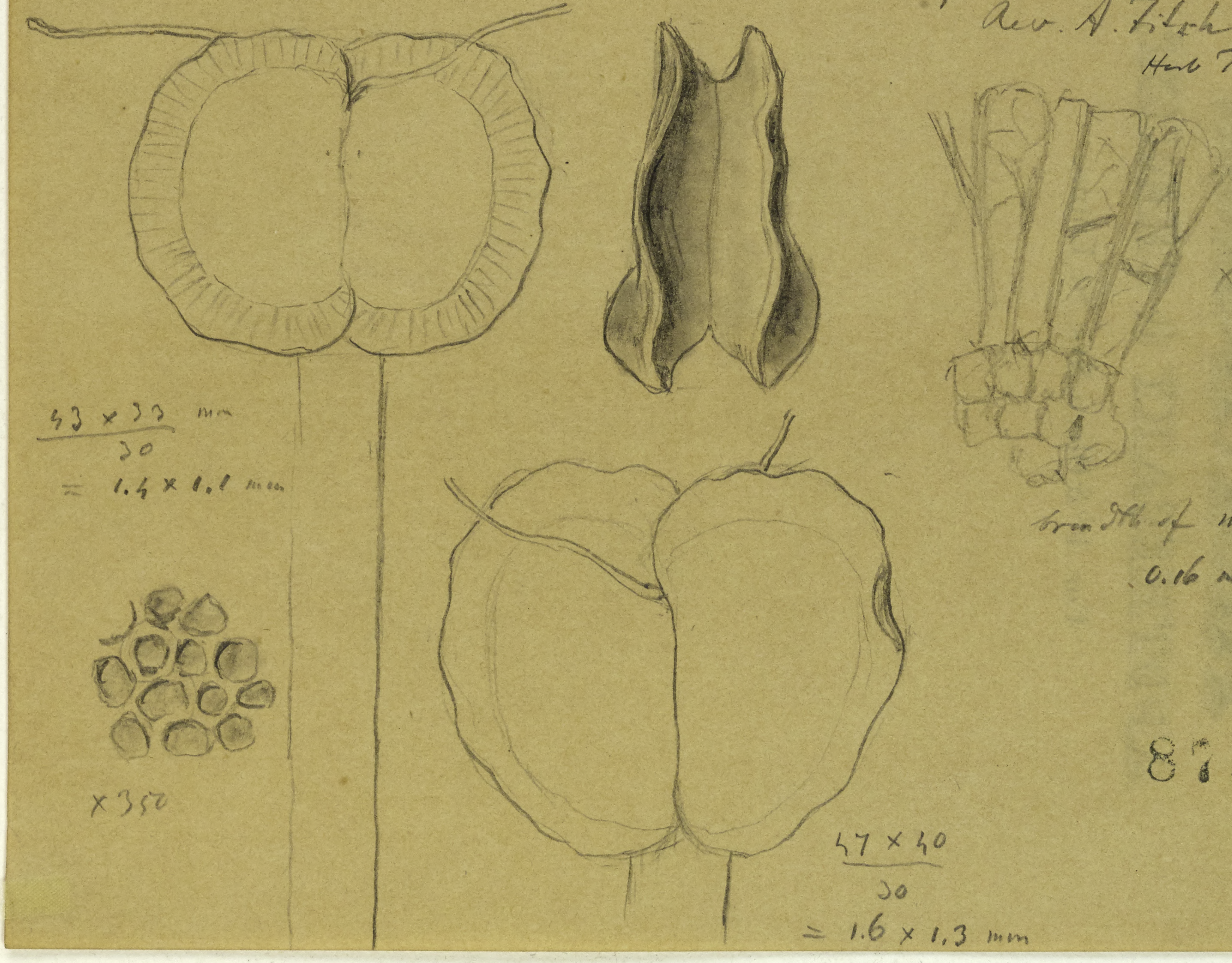


no bracts observed

874

ALEX. LEITCH,
APOTHECARY & PHARMACEUTIST,
Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

Cal. marginata Torr ! Nov 17 1864
Califor
Rev. A. Fitch
Herb Torrey



× 750

breadth of margin 0.16 mm.

43 × 33 mm / 30 = 1.4 × 1.1 mm

× 350

47 × 40 / 30 = 1.6 × 1.3 mm

875

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Alex. Leitch,
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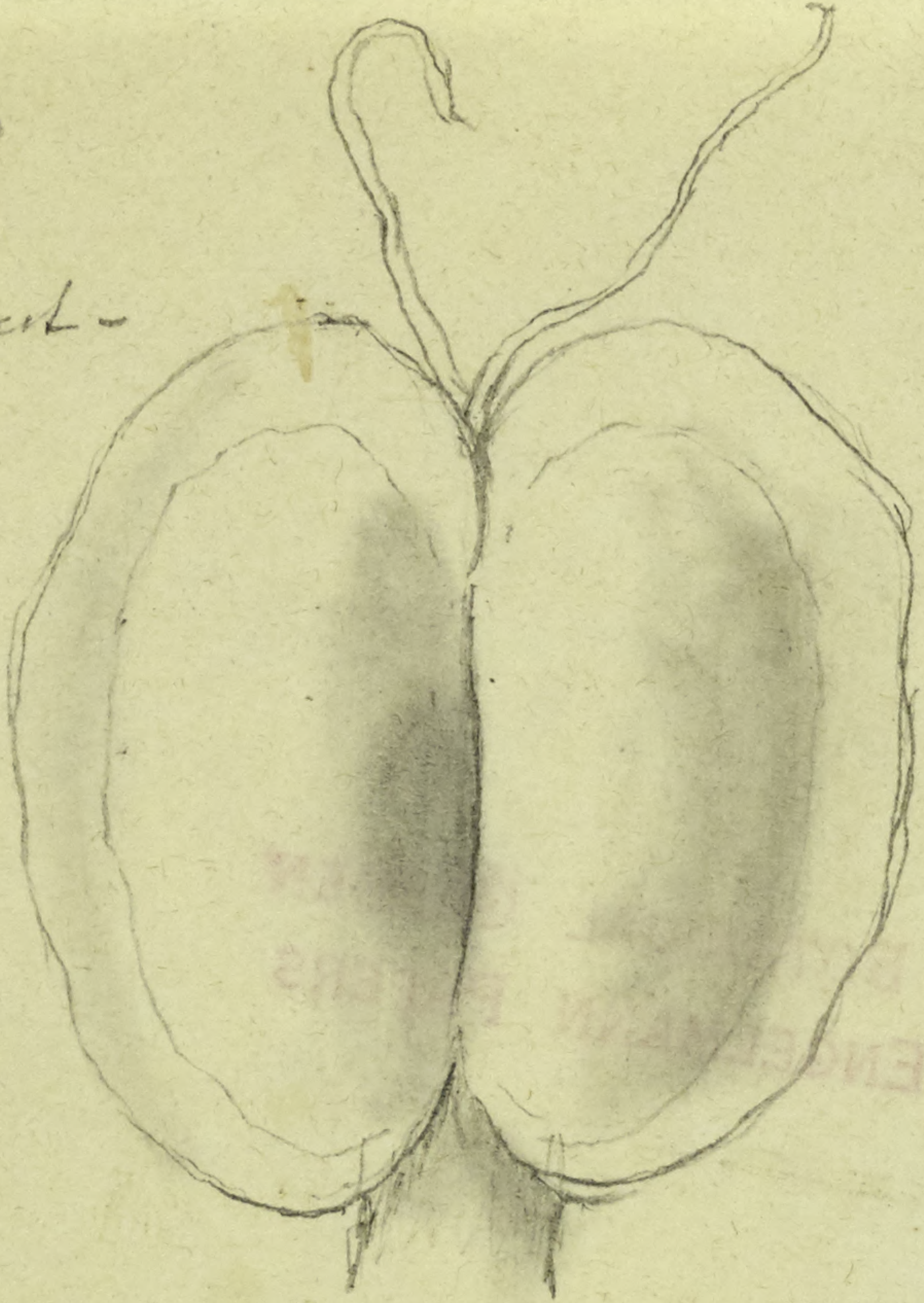
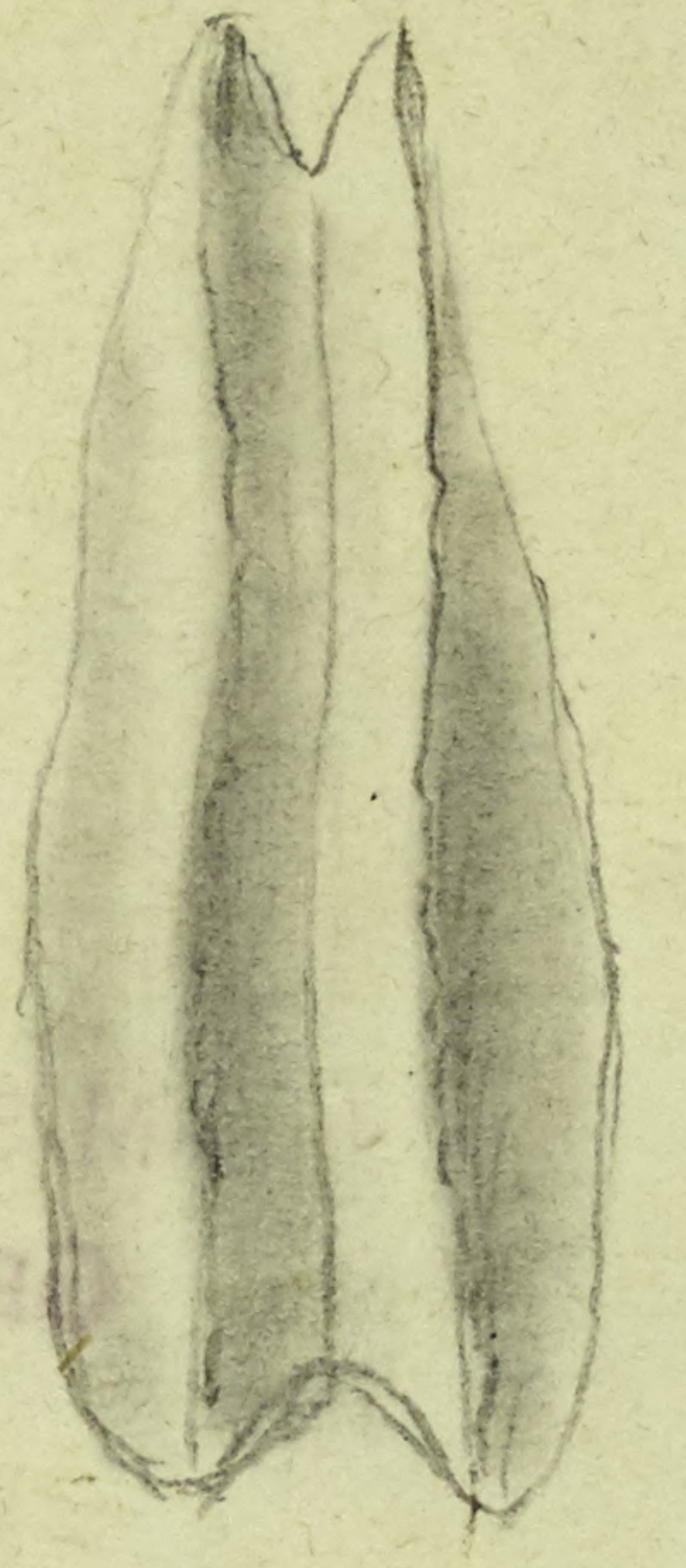
Callitriche turfosa Bert 142 Sept 5 1864

X 30

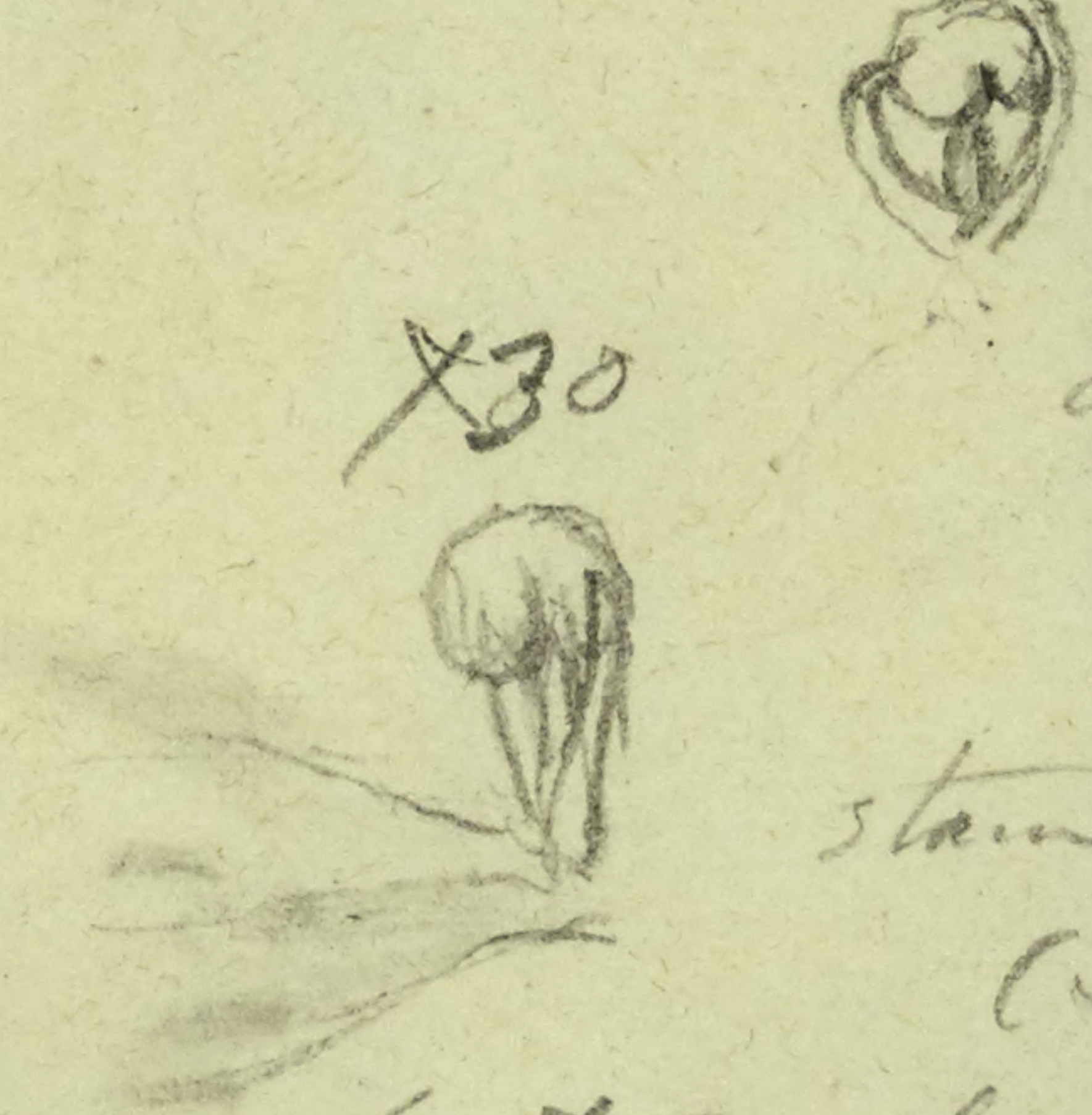
styles erect-patulous rarely recurved



diam 1.3 mm



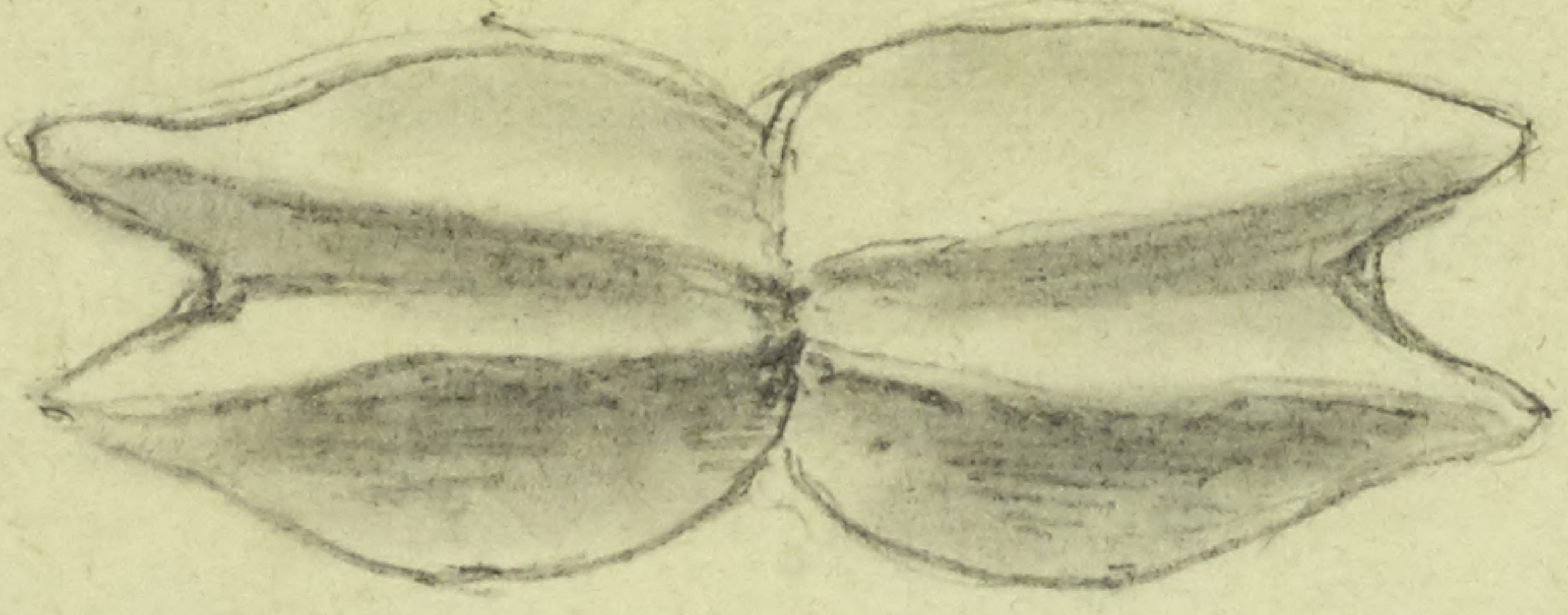
X30

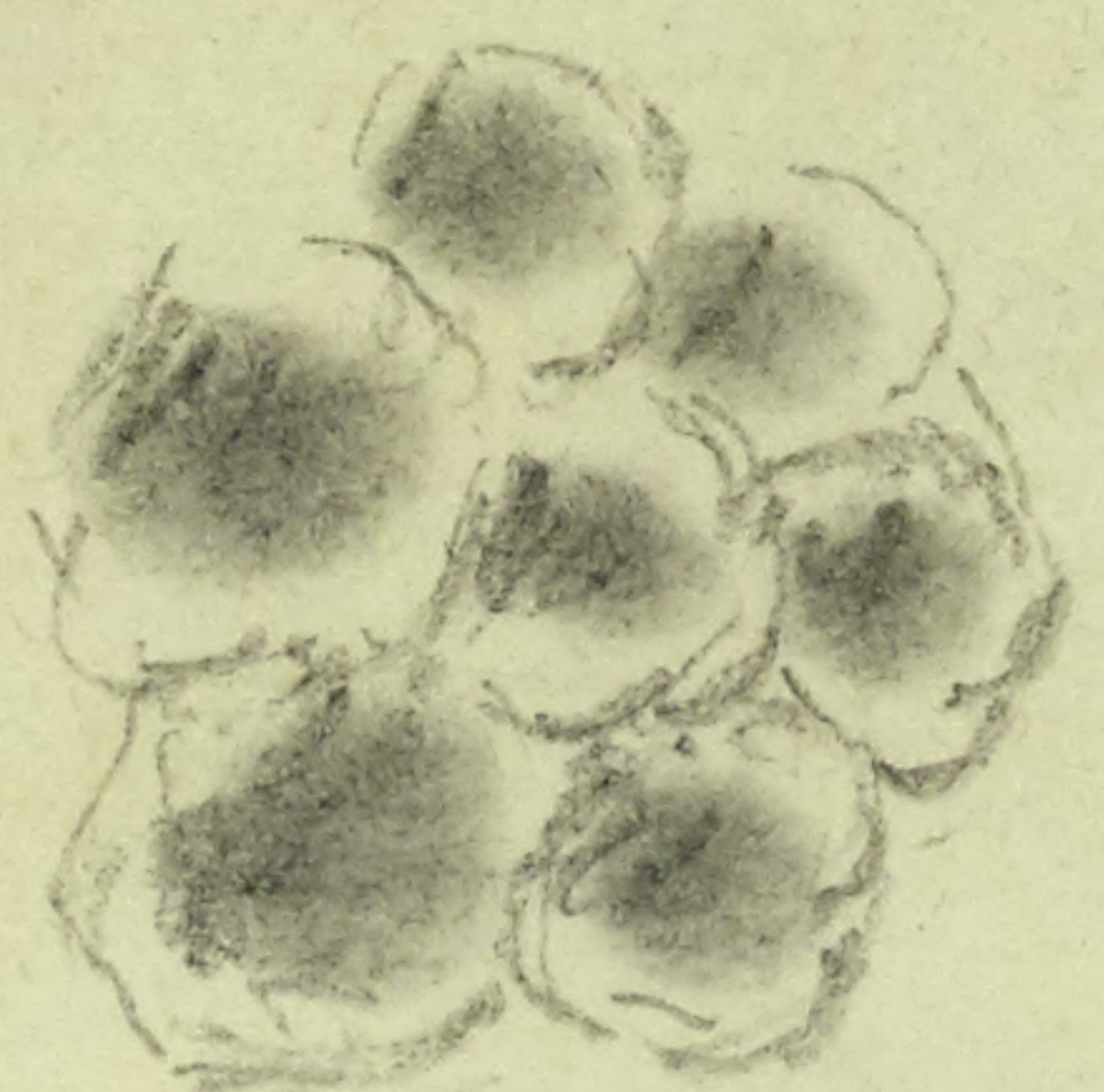


stamen & 2 bracts

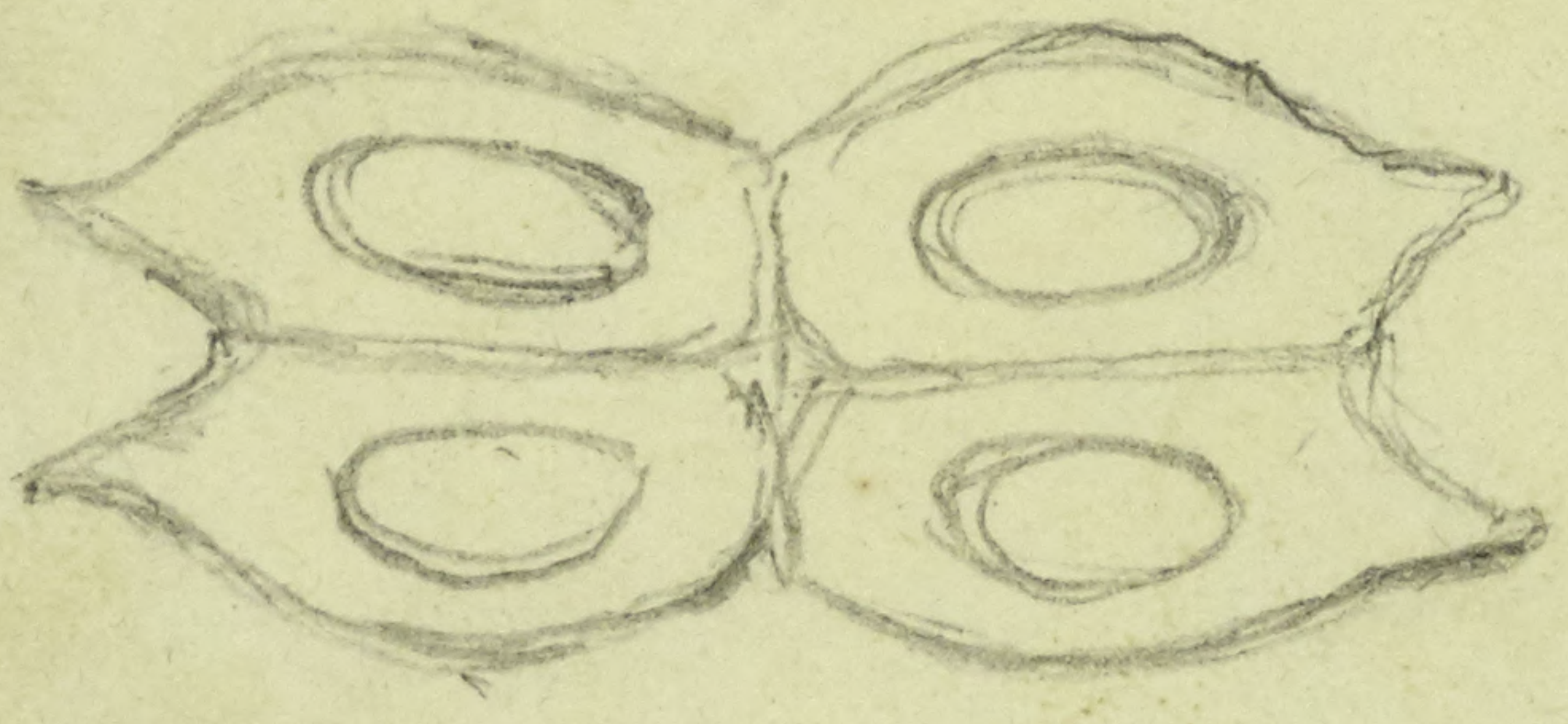
stamen very short
([illegible] !)
bracts subulate, small
caducous straight
or slightly curved

Anthers very small
(abortive ?)





surface X150
indistinctly pitted
& reticulate



876

ALEX. LEITCH,
APOTHECARY & PHARMACEUTIST,
Marble Building Cor. Fourth & Olive Sts. St Louis, Mo.

too near C. stagnalis

C. marginata

(Callitriche turfosa Bert in sched. in part
α sessilis N. 142
β. pedunculata N. 141)

Hegelm. Monog. 1864 p. 59

43-6

Compare C. marginata

IV. *Direction of Winds and number of Thunderstorms in '61 & '62.*

1861.	E.	N.	N.E.	S.W.	N.W.	S.	W.	S.E.	Prevailing Winds.	Thunder-storms.
January......	11	3	12	22	38	18	28	61	S.E.	 0
February	4	2	2	35	24	19	41	60	S.E.	 2
March.........	12	11	10	23	30	19	42	40	W. & S.E....	 3
April	16	10	9	26	21	35	34	26	S. & W.......	 2
May	26	10	23	21	8	13	49	35	W. & S.E....	 5
June..........	12	21	22	20	25	26	8	41	S.E.	 7
July	3	31	14	21	26	46	15	29	S.	 3
August.......	18	24	58	17	11	18	3	37	N.E.	 5
September...	6	14	18	26	30	13	21	52	S.E. & N.W.	 3
October......	12	9	5	21	30	33	30	46	S.E. & S.....	 1
November....	7	15	8	22	27	20	36	44	S.E. & W....	 1
December ...	9	19	9	25	23	33	17	51	S.E. & S.....	 0
	136	169	190	279	293	293	324	522	S.E.	 32

1862.	E	S.W.	N.	N.E.	W.	S.	N.W.	S.E.	Prevailing Winds.	Th. st's.
Jan.......	19	6	19	23	29	3	38	51	S.E.	1
Feb.......	14	9	18	16	22	7	39	43	S.E. & N.W.	0
March ...	9	14	3	15	59	10	34	43	W., S.E. & N.W....	4
April	12	13	18	31	18	11	34	47	S.E., N.W. & N.E..	6
May......	12	18	14	38	18	30	14	44	S.E. & N.E...........	5
June	3	29	24	16	8	36	26	23	S., S.W., N.W., N. & S.E................	6
July......	5	25	17	7	2	24	31	77	S.E.	10
August..	6	16	16	45	5	22	28	48	S.E. & N.E...........	7
Sept.	16	10	21	18	11	18	13	72	S.E.	6
Oct.......	1	15	19	4	10	40	47	46	N.W. & S.E.	1
Nov.......	14	19	21	12	43	19	34	18	W. & N.W.	0
Dec.......	11	17	21	5	34	45	13	38	S., S.E. & W.	4
	112	191	211	230	259	265	351	550	S.E.	50

V. *Positive or Negative Electricity in the Observations of '61 & '62.*

	Positive Electricity.		Negative Electricity.		No Electricity, or 0.		Highest Positive Electricity.	
	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.
Jan.......	179	179	3	5		2	40°	40°
Feb.......	162	166	6	2			34	33
March ...	168	179	15	8			30	48
April	157	157	12	22	1	1	33	52
May......	171	180	17	5	1	3	25	32
June	162	143	5	2	8	20	16	21
July......	183	153	3	8	1	24	14	11
August..	176	143	5	4	6	40	15	19
Sept......	169	117	1	1	10	61	18	23
Oct.......	162	143	4	3	20	41	33	35
Nov... ...	172	157	2	7	6	16	42	42
Dec... ...	175	166	5	0	6	17	37	35
	2046	1883	78	67	59	225	42°	52°

β. pedunculata is named by Steudel nomencl. ed. II. 1841 p. 259.

Callitriche Berteroniana

(C. autumnalis? Bert Herb. no 141)

876A

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Additional Remarks on ATMOSPHERIC ELECTRICITY.

By A. WISLIZENUS, M.D.

The delay in the publication of this volume enables me to add to my observations of atmospheric electricity in 1861, the result of my observations in 1862. The latter observations have been made in the same manner and by means of the same fine glass thread, which, after many thousand torsions, proves as good as ever. I present herewith in tabular form the general result of my observations in 1861 and 1862.

I. *Monthly mean of Positive Atmospheric Electricity in* 1861 *and* 1862, *at St. Louis, Mo., based upon daily observations at* 6, 9, 12, 3, 6 *and* 9 *o'clock, from morning till night.*

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861*	16.5	12.1	9.8	8.8	7.8	4.0	3.7	3.4	3.0	7.1	10.0	14.3	8.4
1862	12.1	16.0	9.4	10.6	7.5	3.0	2.2	2.3	3.0	7.7	12.6	13.9	8.4

* This table of 1861 differs in some decimals from that published on page 66 and in Diagram No. 1. Having discovered some errors, I calculated all my observations once more, and give now the present as the corrected table.

II. *Monthly mean of Temperature and of Relative Humidity in* 1861 *and* 1862, *at St. Louis, Mo., based upon daily observations, cotemporaneous with those of Atmospheric Electricity.*

TEMPERATURE.

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861	32.2	40.4	44.8	58.1	64.1	76.9	77.5	78.6	69.1	57.9	46.0	39.7	57.1°F.
1862	28.9	30.2	43.2	55.0	69.7	75.1	81.2	80.7	72.1	57.3	42.6	41.3	56.4°F.

RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861	72.2	63.3	64.5	61.5	66.3	70.8	66.3	69.6	77.3	76.6	69.0	74.3	69.5
1862	85.3	73.9	70.8	67.0	57.3	67.0	66.8	64.3	74.2	67.2	69.5	74.6	69.8

III. *Yearly mean of Positive Electricity of Temperature, and of Relative Humidity of the Atmosphere, at the hours of* 6, 9, 12, 3, 6 *and* 9, *from morning till night, based upon daily observations at these hours through the years* 1861 *and* 1862, *at St. Louis, Mo.*

ELECTRICITY.

	At 6 A.M.	At 9 A.M.	At 12 M.	At 3 P.M.	At 6 P.M.	At 9 P.M.
1861	8.6	10.0	9.2	7.9	8.7	6.9
1862	8.9	10.0	9.1	7.3	8.1	6.8

TEMPERATURE.

1861	48.9° F.	54.9	61.6	63.6	59.3	54.3
1862	48.9	55.0	60.9	62.3	58.0	53.6

RELATIVE HUMIDITY.

1861	86.4	71.3	60.3	57.2	65.1	77.3
1862	5.3	70.6	60.0	57.5	67.6	78.0

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Callitriche turfosa Bert. No 142 Sept 4 1864
Chili
(Herb HBG Missouri)

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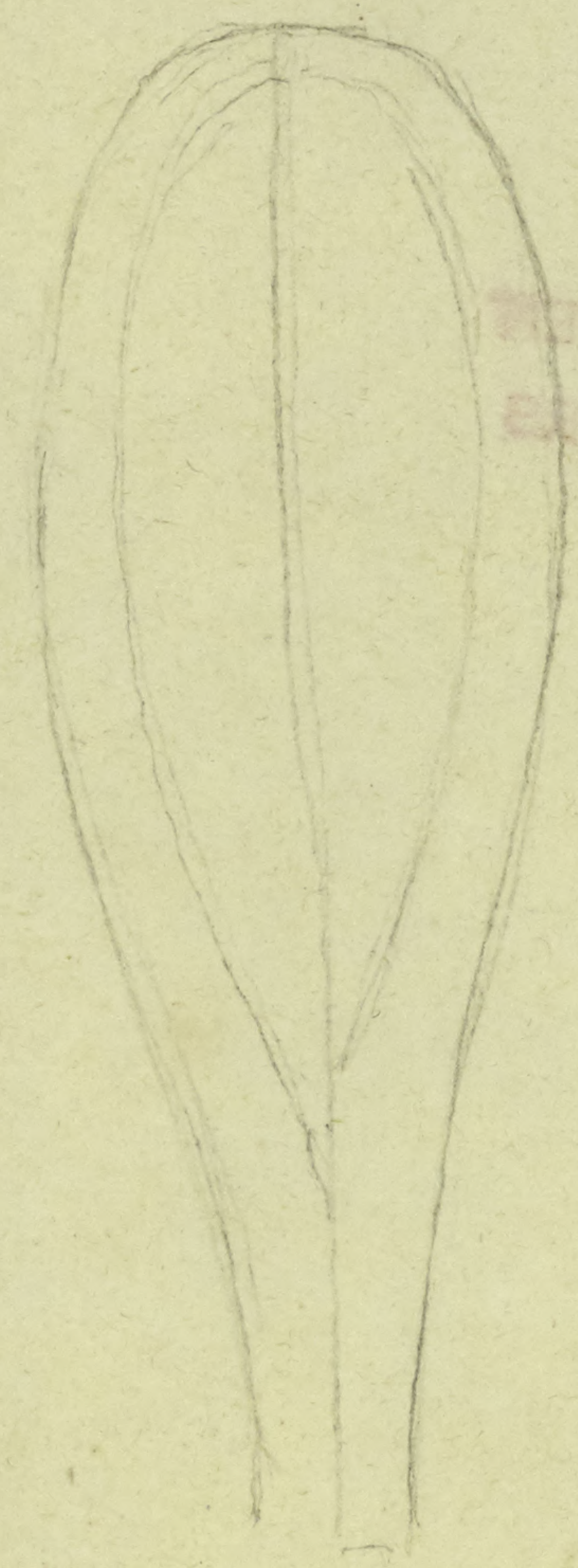

larger leaves
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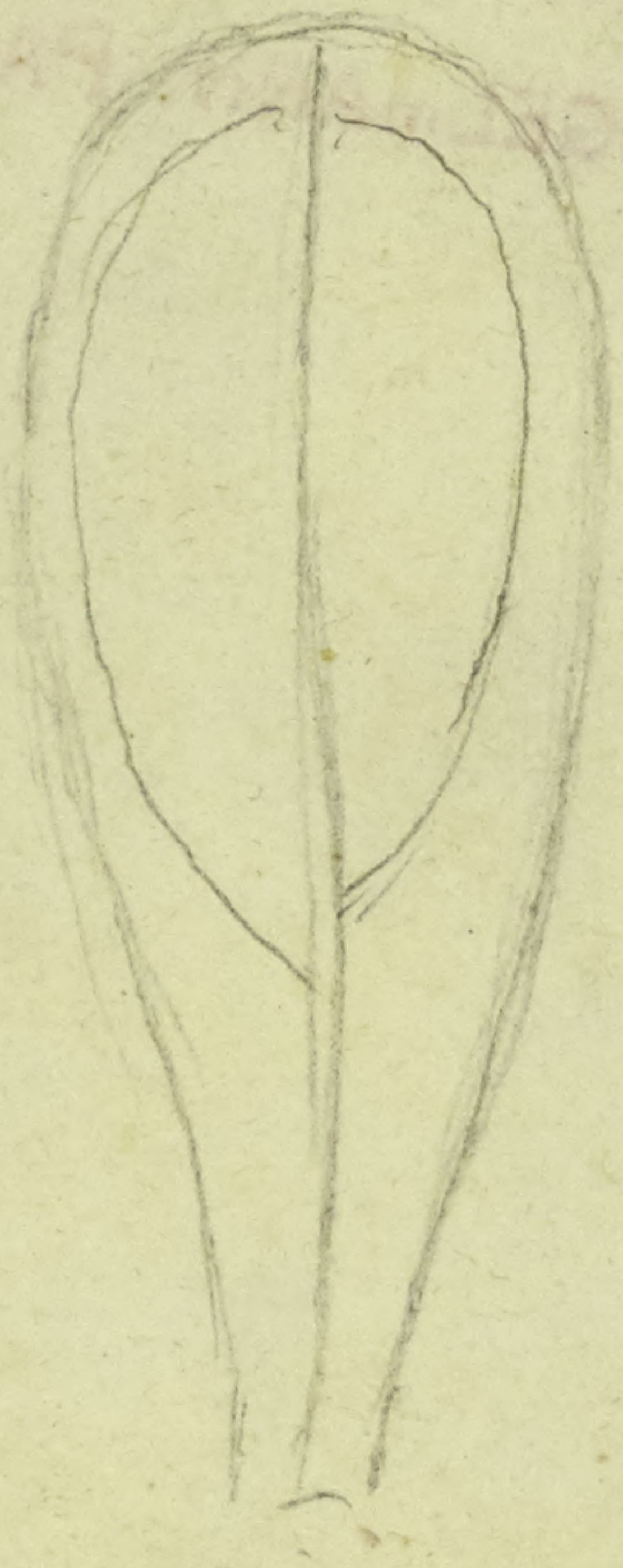

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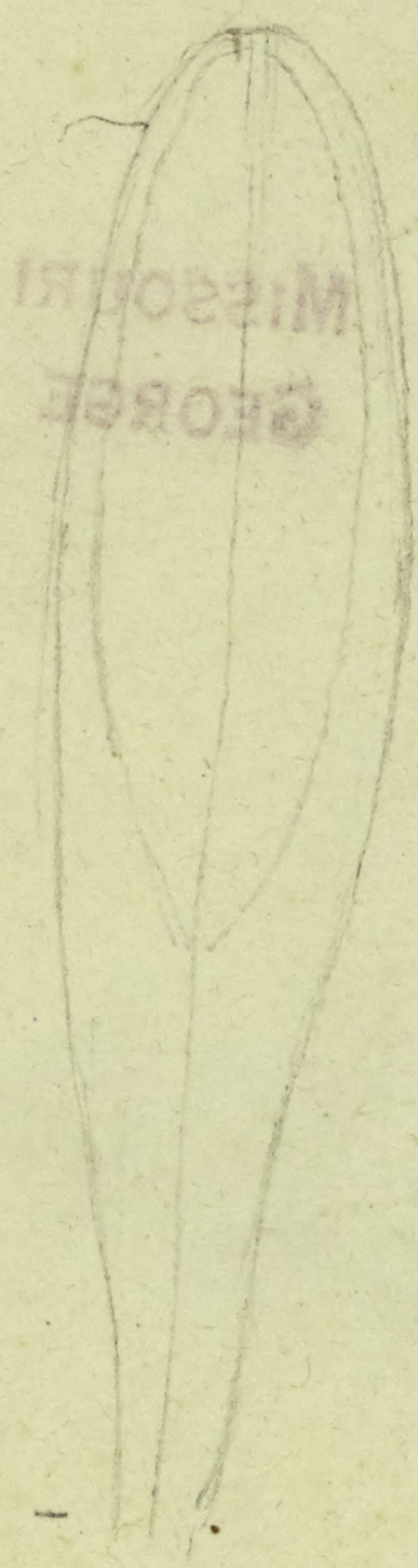

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